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An Address
ON
THE DEGENERATION OF THE NEURONE IN THE LIGHT OF RECENT RESEARCH,
ESPECIALLY IN RELATION TO SYPHILIS AND GENERAL PARALYSIS.

Delivered at Birmingham at the Inaugural Meeting of the Midland Medical Society, Session 1913-1914.

By F. W. MOTT, M.D. Lond., F.R.C.P. Lond., F.R.S.,
PATHOLOGIST TO THE LONDON COUNTY ASYLUMS.

Mr. President and Gentlemen,—Allow me to thank you for inviting me to follow the long list of distinguished members of our profession who have had the honour of giving an address at the annual inaugural meeting of the Midland Medical Society. I must first ask your permission to extend the title of my address in order to limit the scope to a subject in which I have long been interested—viz., the relation of syphilis to the degeneration of the neurone, especially in general paralysis, which owing to recent discoveries and the importance of the subject, particularly at the present time, necessitates a fuller discussion than other causes of degeneration of the neurone.

Degenerations of the Neurone.

The term "neurone" implies a nervous unit—that is, a nerve cell and all its branches. The nervous system is made up of countless millions of nervous units, each one existing as an independent organism in contiguity but not in continuity. The neurones are genetically and trophically independent cellular organisms arranged in functionally correlated systems, communities, and constellations. There are two types of neurones, one in which the axis-cylinder process leaves the grey matter and acquires a medullated sheath—this is the first type of Golgi; the other, the second type of Golgi, in which the axis-cylinder process does not leave the grey matter. The nutrient and supporting tissues—viz., the blood-vessels, lymphatics, and neuroglia tissue—make up the histological elements.

Degeneration of the neurone may occur from an inherent lack of durability of certain correlated functional systems, as occurs in certain diseases which affect members of families at the same age in life and often in generation after generation—e.g., Huntington's chorea, hereditary ataxy. Degeneration of the neurone may result from direct injury or local extension of inflammation or by ischæmic softening due to obstruction of the blood supply by vascular occlusion; the degeneration that results therefrom is secondary. But when for whatever cause nervous tissue disappears the neuroglia always reacts by a nuclear and fibrillar proliferation—a law formulated by Weigert in 1890. The replacement of the nervous tissue by the neuroglia tissue causes a "sclerosis." But it is hardly necessary to remind you that the term "sclerosis" in the sense of a neuroglia proliferation being the primary cause is incorrect; the sclerosis is the effect, not the cause. Certainly there is a primary gliosis due to embryonic tissue taking on active growth, but the destruction of the neurones in syringomyelia is not caused so much by the gliosis as by hæmorrhages occurring in the glial tissue.

Now we recognise a certain number of primary degenerations of the nervous system characterised by insidious onset, progressive character, and a tendency sooner or later to a fatal termination, generally hastened by intercurrent disease or secondary microbial infections due to complications. I will put on the screen a slide to illustrate some of these primary degenerations. A pure primary decay of the neurone has been termed by Sir William Gowers "abiotrophy." Many of these conditions of abiotrophy are associated with chronic inflammatory changes, and it is very difficult to say how far these cause the decay of the neurone or are the result of it; certainly a proliferation of neuroglia tissue may result from simple atrophy and decay of the neurones, but a perivascular lymphatic infiltration with lymphocytes and plasma cells are evidence of a reaction to the poison.

Now there are two diseases which I have studied for many years in which this perivascular cell infiltration, together with neurolgia proliferation, is particularly marked and more or less universal in the central nervous system. They are the diseases caused by two specific protozoal organisms—the trypanosoma gambiense, the organism which causes sleeping sickness, and the spirochæte pallidum, the organism of syphilis.

Sleeping Sickness.

When I first published an account of the histology of sleeping sickness 14 years ago I pointed out the close similarity in the histological changes of the central nervous system to syphilitic meningo-encephalitis. I will show you now on the screen slides illustrating this, also one of experimental sleeping sickness. You will observe that the same perivascular infiltration with lymphocytes and plasma cells occurs in sleeping sickness, in syphilitic meningo-encephalitis, and in general paralysis of the insane (Figs. 5 to 9). In the last-named disease we have, as Noguchi says, a parenchymatous meningo-encephalitis.

The knowledge of the cause of sleeping sickness began with the discovery by Castellani of the trypanosoma gambiense in the cerebro-spinal fluid of five cases of sleeping sickness in Uganda, and the importance of this discovery is best shown by Sir David Bruce's acknowledgment in the fourth volume of the Sleeping Sickness Commission.

This *most interesting discovery* of Dr. Castellani's, which was due to his introduction of the method of centrifuging the cerebro-spinal fluid in his search for streptococci, has been of the utmost value to the present Commission. It put them at once on the right track, and led to the easy and rapid elucidation of the hitherto mysterious disease. Without knowledge of his observation they might have worked for months in the dark, and, in truth, they might even have returned to England still ignorant as to the true cause of the disease.

Castellani had already given it as his opinion that a streptococcus was the cause of the disease, he believing that the trypanosome, like the filaria perstans, was an accidental concomitant. If he had been able to extend his observations he might have changed his opinions. I mention this because a letter appeared in the *Times* disputing Professor Ehrlich's right to give any credit to Castellani for the discovery of the cause of the disease.

A large number of specimens of brains of cases of sleeping sickness were sent to me to examine by the Commission, and I could add little or nothing to my original description of the histological changes found in two cases of Manson

which were in Charing Cross Hospital. I never succeeded in finding the trypanosomes in sections, but I have seen them in brain smears; the trypanosomes were always found in the cerebro-spinal fluid by Sir David Bruce.

Now the trypanosome of sleeping sickness is, comparatively to the spirochæte pallidum, a large organism, and therefore it is not surprising that no one before Noguchi was able to find the specific organism of syphilis in the brains of general paralytics; although to my mind the facts which had already accumulated since Fournier pronounced this disease to be parasyphilitic seemed to be overwhelming proof that if there were no syphilis there would be no general paralysis.

CLINICAL AND ETIOLOGICAL FACTS SUPPORTING THE SYPHILITIC ORIGIN OF GENERAL PARALYSIS AND TABES DORSALIS.

1. A history of syphilitic affection, usually of a mild form as regards secondary and tertiary symptoms, can be obtained in as large a proportion of cases of general paralysis as in obvious syphilitic skin lesions. 2. A correlation of the incidence of syphilis and the incidence of general paralysis in the two sexes according to the social grade. 3. In 60 cases of the juvenile form of general paralysis I found evidence of congenital syphilis either in the family history or signs on the body of the patient in nearly every instance, and in not one could it be excluded. In the juvenile form the sexes are equally affected. Mental stress, alcoholism, and sexual excesses, the previously attributed causes, can be excluded. 4. I showed that Fournier was right in asserting that tabes and general paralysis pathogenetically were one and the same disease, affecting different parts of the nervous system, for I collected 70 cases of tabo-paralysis, and I found that some began as tabes and ended in general paralysis; in others the spinal and cerebral symptoms started simultaneously; while again in others it began with optic tabes and ended in spinal tabes or tabo-paralysis. About 10 per cent. of cases of tabes end in tabo-paralysis. 5. The most convincing proof of the syphilitic nature of general paralysis was Krafft-Ebing's inoculation of nine paralytics with no history and no signs on the body, none of whom were capable of re-infection. In all my very large experience I have never seen a primary sore or secondary eruption on a paralytic.

This chain of circumstantial evidence was strong enough for most neurologists, and eminent authorities such as Sir David Ferrier, Dr. Drummond, and many others were convinced, as I was, that if there were no syphilis there would be no tabes or general paralysis.

THE SEARCH FOR THE SPECIFIC ORGANISM IN THE BRAIN.

Then came the discovery of the spirochæta pallida of syphilis by Schaudinn, and the successful inoculation of anthropoid apes by Metchnikoff, Hoffmann, Neisser, and others, which was extended to other animals such as apes and rabbits. This was followed by the introduction of the Wassermann reaction, and the blood of persons who were reacting to the syphilitic organism was shown to have complement fixation. It was soon found that general paralytics invariably gave the reaction in the most marked manner, and later Plaut showed that the cerebro-spinal fluid gave a positive reaction in 96 out of 97 cases, the serum giving it in every case. Indeed, the cerebro-spinal fluid was much more certain to give a positive reaction than syphilis of the nervous system. My assistant, Dr. J. P. Candler, has found 98 per cent. of paralytics give a certain positive reaction of the fluid, and the results have been already confirmed in over 200 cases by post-mortem examinations.

The introduction of the ultramicroscope led us to look for the spirochæte in the cerebro-spinal fluid in a number of cases, but we did not meet with success. I also made a great number of preparations of sections of the brain by the Levaditi method, but, like Minea and Marinesco, who examined 30 cases of general paralysis, I was unsuccessful in finding the spirochæte. I therefore concluded that in all probability there was a latent granular form, and in the fourth volume of the System of Syphilis—"Syphilis of the Nervous System"—I put forward this view, supporting it by the fact that I had seen in smear preparations enormous numbers of chromidian granules; likewise in sections of syphilitic papules, where only a few spirochætes were seen, I have observed these granules. But my main argument was based upon the important observation by Leishman that the spirillum of tick fever exists in a granule form in the cells of the body of the tick, and he could cause these granules to develop into spirillary forms. Again, Neisser was able to infect monkeys with the marrow of bone of infected animals, although the most diligent search showed no spirochætes. Noguchi himself thinks there may be a granule form; in fact, his culture experiments seem to indicate such. Moreover, Balfour and O'Farrell have stated that they have observed a shedding of granules after acting upon spirochætes with salvarsan. The paper published in February by Noguchi and Moore, in which it was shown that Levaditi-silver-stained-preparations of 70 cases of general paralysis showed spirochætes in 12 of them, was an epoch-making discovery.

When I was at the Rockefeller Institute in April, Noguchi was good enough to give me one of these preparations, which left no doubt in my mind of their existence. Since this discovery by Noguchi we have a new conception of the disease on the sure ground of direct observation, yet there are still many facts unexplained; nevertheless, all the evidence points to the fact that the term "parasyphilis," meaning a post-syphilitic affection, must be superseded by the term *parenchymatous syphilis*. Noguchi has examined another 130 cases of general paralysis, and in this second series he found the spirochætes in 36, making in all 48 out of 200. In 6 cases he examined fresh brains by means of the ultramicroscope, and in one of these he found spirochætes. In 12 cases of tabes he found the organism in one only. Marinesco and Minea have reported that 1 case out of 26 yielded a positive result by the silver method. This case showed nests of spirochætes, as many as 60 in one field of the oil immersion being counted. I throw on the screen a photomicrograph of a specimen sent me by Professor Marinesco. (Fig. 5.)

Marie, Levaditi, and Bauchowski have reported 3 positive results out of 30 cases of general paralysis by the silver method. In a more recent publication they claim to have shown that spirochætes are constantly present in the brains of general paralytics dying in seizures. They emphasise the importance of a systematic examination of all the convolutions of the cortex until a positive result is obtained. They do this by sections, by films prepared from an emulsion of the cortex and

subsequent examination by the Indian ink method or the silver method of Fontana. They found spirochætes in all the 7 cases examined. They observe that if one can localise the muscular epileptiform seizures a guide will be obtained of a focus of spirochætes in the neighbourhood of the portion of motor area affected. I show a preparation kindly sent me by M. Marie. (Fig. 4.) Forster and Tomaszewski obtained 2 positive results out of 4 cases in which the material was taken from the patient by the Neisser-Pollak puncture method and examined by the ultramicroscope.

NOGUCHI'S EXPERIMENTAL OBSERVATIONS.

Before referring to my own observations I will give a *résumé* of Noguchi's experiments relating to the transmission of the spirochæte pallidum obtained from the brains of general paralytics to the rabbit, and the experimental production of syphilitic encephalitis in this animal.

Noguchi inoculated into the testicles 36 rabbits with the emulsion of six different specimens of brains of general paralytics in the fresh state. At the end of 97 days in one case and 102 days in the other a small but typical induration of the testicle and scrotal skin occurred. In the first case the spirochætes were few, in the second they were abundant. It is interesting to note how slow was the development as compared with the transmission by infection made with material obtained from a chancre or secondary lesion; in the latter case the lesions generally appear after an interval of four to six weeks, rarely two months elapse.

THE EXISTENCE OF THE PARASITES IN THE PARENCHYMA OF THE NERVOUS SYSTEM IN RELATION TO THEIR RESISTANCE TO THE ACTION OF DRUGS.

This interesting observation of Noguchi may be correlated with the many facts which seem to point to the specific organism that produces general paralysis being either a form which has been modified by the widespread use of mercury or modified by passing through the bodies of individuals who have acquired resistance. A number of instances of infection have been reported which seem to point to the possibility of a specific organism; the most convincing being that of Brosius in which seven glass-blowers were infected, four of whom ten years later suffered with tabes or general paralysis. Certain it is that the average time after infection in general paralysis and tabes is 10 years, and the signs and symptoms of the disease externally manifest in the form of skin and bone lesions are as a rule either absent, mild, or obscure; whereas in syphilitic brain and cord disease the great majority of the cases occur within the first four years after infection, the greatest percentage occurring in the first and second years. Whereas the signs and symptoms of the latter are coarse and obvious and with generally well-marked skin eruptions amenable to treatment, the former—the so-called parasyphilitic, or, as I shall prefer to call them, parenchymatous syphilitic disease—are late (quaternary) and comparatively unamenable to treatment. Is this because they are mercury-fast organisms, or is it because they exist in a latent granular or intracellular form in the parenchyma of the nervous system, where they cannot be attacked by the drugs such as arsenic, mercury, and antimony? By analogy this does not seem improbable, seeing that in sleeping sickness when once the trypanosome has invaded the nervous system, atoxyl and other arsenical and antimonial preparations which were intravenously injected fail to kill the parasite and arrest the progress of the disease. Moreover, there is other evidence in favour of this conclusion. Arsenic is not found in the brain when large quantities of arsenic have been taken in cases of poisoning; it has not been found in the fluid after injection of salvarsan intravenously. The late Professor Goldmann has shown that the choroid plexus intercepts dyes which have been injected intravenously in large quantities, 100 c.c. of a 1 per cent. solution of trypan blue, whereas 1–2 c.c. of 0·5 per cent. solution injected by lumbar puncture stains the whole cerebro-spinal axis except the cortex, penetrating and staining all the neurones. This, as I shall tell you later, has led to the idea of a new method of treatment, not by injecting weak doses of salvarsan or neosalvarsan intrathecally, for this would be a most dangerous proceeding; to kill the parasites you might kill the neurones and the patient.

The only case of trypanosomiasis ugandensis that I have heard of as having recovered was a Sikh whose brain was sent to me for examination. He lived five years after infection and was treated for a long time—18 months—with atoxyl, then with mercury, for he became intolerant of arsenic and had contracted syphilis. Three years after infection his fluid was examined by Sir David Bruce and found free of trypanosomes and he showed no signs or symptoms of sleeping sickness; he died two years later. I examined his brain and found no signs of perivascularitis or neuroglia proliferation —histological changes which were present in every case, 30 in all, that I had previously examined and which during life had exhibited the characteristic lethargy.

These facts show that the presence of the trypanosome in the central nervous system is necessary to produce the meningo-encephalitis characteristic of the disease, although to my mind it is possible that toxins may pass into the central nervous system along perivascular and perineural lymphatics, as Orr and Rows have shown experimentally.

FURTHER EXPERIMENTS OF NOGUCHI.

Noguchi has shown that the central nervous system of monkeys and rabbits is very resistant to syphilitic infection, even when the virus is introduced directly into the cerebral substance. Most animals remain in perfect health during an indefinite period after the intracerebral inoculation of spirochæte pallidum. Noguchi conceived the idea that it was necessary to sensitise these animals by repeated intravenous injections with dead and living spirochætes; this he did for five months. At the end of this time he made an intracerebral inoculation or subdural insertion of an emulsion of minute particles of testicular syphiloma of the rabbit, rich in spirochætes. Twelve sensitised and 4 normal rabbits were employed, all of which remained healthy for two months; then some of the sensitised rabbits showed symptoms. The animals were killed and 3 of those which had been sensitised showed cerebral changes not unlike those of a syphilitic meningo-encephalitis. For my own part, I am doubtful whether these experiments prove very much one way or the other as regards the production of general paralysis in animals.

PERSONAL OBSERVATIONS.

I will now refer to the recent work concerning the existence of the spirochæte in the brains of cases of general paralysis which has been done

under my direction at Claybury; also I will endeavour to demonstrate the difference in the pathogenesis and histology of syphilitic meningo-encephalitis and general paralysis and syphilitic meningo-myelitis and tabes dorsalis. I will also compare the histology of sleeping sickness, a trypanosome infection, with the syphilitic spirochæte infections, and the deductions which can be made therefrom. Lastly, I will call your attention to an inquiry into the incidence of general paralysis in the different parishes and districts of the county of London.

SPIROCHÆTES IN THE BRAINS OF GENERAL PARALYTICS.

Having failed to find the specific organism in sections stained by the Levaditi method after a diligent search of numbers of sections from numbers of cases—in this search I was aided by my assistant Mr. Charles Geary, Dr. Fisher, and Major Fink—I resolved to adopt the Indian-ink method (Burri); and by this method I soon obtained apparently positive results. I say apparently, for it must be admitted that delicate curled filaments may be mistaken for spirochætes, and unless these spiral forms have been observed in the living state moving on the dark-ground microscope convincing proof of the presence of spirochætes would be wanting. Yet I feel convinced they were in the light of further researches by the Fontana method and the ultra microscope.

I have thought that active pullulation of the specific organisms might be associated with epileptiform seizures, and in support of this I may observe that I have found that unilateral convulsions of a severe nature were at the necropsy associated with a great wasting of the corresponding hemisphere. For example, I have found after prolonged right-sided seizures a marked speech affection and a hemiparesis; at the post-mortem examination the left hemisphere has in some instances of this kind weighed as much as 100 grm. less than the right. In the light of recent researches of Noguchi it is probable that the active development of the spirochætes leads to the production of toxins which cause a rapid destruction of the neurones in two ways—firstly, by the direct destructive effects of the toxins on the neurones; and secondly, by irritation and proliferation of the cell elements of the perivascular lymphatic sheaths, the capillary endothelium, and the neuroglia cells, the perivascularitis and capillary changes causing blood stasis and destructive effects on the neurones secondary to these inflammatory changes

But to return to the demonstration of spirochætal foci in the brains of paralytics. Having this hypothesis of association of active proliferation of the specific organism and the onset of seizures I wrote an encyclical letter to the superintendents of all the ten asylums asking them to forward me the brains of patients who just prior to death had had seizures, and from these brains, which numbered in all 11, I obtained by the Indian-ink method spiral forms in 8 cases. Of 7 cases dying at Claybury in the ordinary routine and not selected, in 3 spiral forms were found (*vide* illustration). Portions of all these 18 brains were fixed and stained by Noguchi's modified silver method and sections made; so far specimens from eight brains have been examined but without results; indeed, the fibrils in many of the specimens are stained as well as in Levaditi preparations.

My assistant, Mr. Geary, has now succeeded in staining films with the Fontana Tribondeau silver method, and we have obtained excellent results in 3 cases; in one of these—a brain sent from Horton, which was comparatively an early case—numbers of spirochætes were found in film preparations (*vide* illustration) of the second frontal convolution, but from no other of many regions examined. This shows the truth of Marie, Levaditi, and Bauchowski's observation that all the convolutions of the cortex require to be examined systematically. The spirochætes of this case four days after death were also observed moving, it is true only sluggishly, by means of the ultra-microscope. Spirochætes were not found in films from the second frontal when the brain was received; but 24 hours later, when the substance was soft and a certain amount of decomposition had occurred owing to invasion of other organisms, they were found in abundance in this one region.

Seeing that fœtal tissues containing a great abundance of spirochætes are generally decomposed and contain numbers of other organisms, as also chancres and the enlarged lymphatic glands, it is possible that the secondary microbial invasion by aerobic organisms may possibly favour in some way the development of the non-aerobic specific organisms, as we know is the case in tetanus. Certainly my experience teaches that pneumonia, dysentery, septicæmia, and other intercurrent secondary microbial infections are especially liable to be associated with seizures, not necessarily generalised, but often unilateral in character.

Further experiments and observations which I am now making will, I hope, help to decide whether the hypothesis of a latent granule form, which under favouring circumstances develops into a spirochætal form with production of toxins, is true or not. The great difficulty is that the search for spirochætes in the brain is like looking for the proverbial needle in a haystack; not finding does not mean non-existence. The investigation is attended with great technical difficulties, and there is still much to be done before we can fully understand the pathogenesis and pathology of these late syphilitic diseases of the nervous system.

INTRATHECAL INJECTION OF PATIENTS' SERUM AFTER SALVARSAN TREATMENT.

In respect to the early acute infection of the central nervous system, I may mention that I recently had under my care a case of gummatous meningo-encephalitis. Infection occurred in February last, and in spite of intramuscular injections of salvarsan and mercury severe cerebro-spinal symptoms set in in September. The cerebro-spinal fluid showed a great abundance of lymphocytes, and a spiral form which resembled a short spirochæte was found in one of the Indian-ink preparations of the centrifuged deposit. As I could not find spirochætes moving with the dark-ground illumination this is not claimed as convincing proof. The cerebro-spinal fluid, like the blood, in this case yielded a very marked complement fixation. He subsequently received an intravenous injection of 0·4 grm. neosalvarsan with great improvement, but the greatest improvement resulted from an intrathecal injection of serum taken one hour after another dose of neosalvarsan had been administered; subsequent to this the fluid became less positive and the lymphocytosis disappeared.

The serum was tested for arsenic and yielded no result; the legitimate conclusion being that the action of the serum is due to the presence of antibodies in

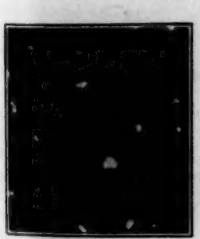
FIG. 1.

Spirochæte in smear of condyloma stained by Giemsa. (× 1800.)

FIG. 2.

Spirochætes from a smear of brain in case of general paralysis; stained by Fontana silver method. (× 1400.)

FIG. 3.



Smear of brain of general paralytic, stained by Indian ink method, showing spirochæte. (× 1550.)

FIG. 4.

Section of brain stained by a silver method from a preparation by Professor A. Marie. (× 1740.) Many spirochætes are seen in the field but only one is in focus.

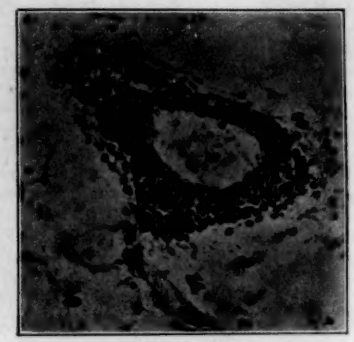
FIG. 5.

Section of brain of general paralysis stained by the silver method, showing spirochætes, one in focus; preparation of Professor Marinesco. (× 1550.)

FIG. 6.

Section of the brain of general paralysis showing small vessel with perivascular cell infiltration. (× 350.) This preparation and the two following stained by polychrome blue.

FIG. 7.



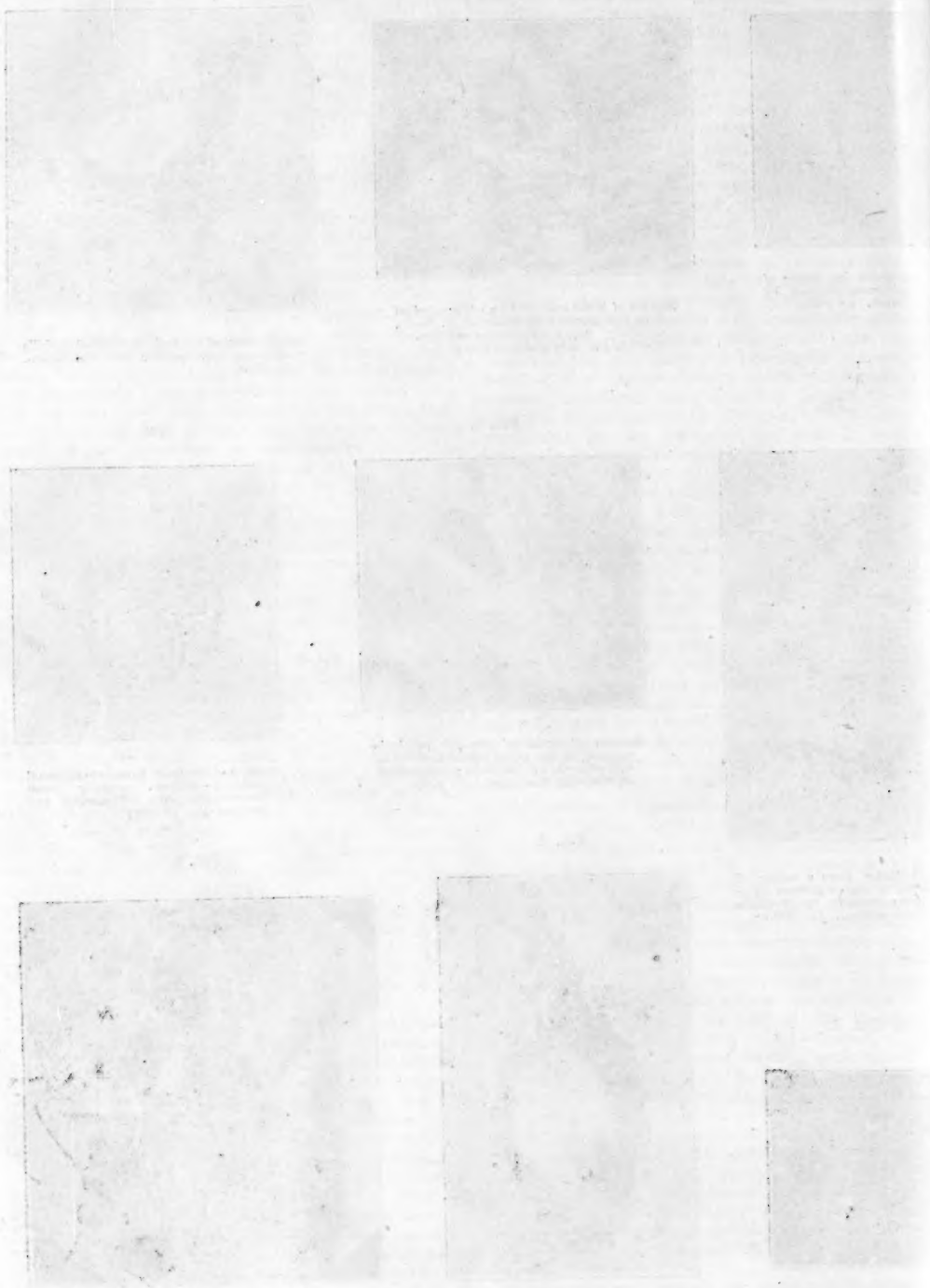
Small vessel of the brain in cerebral syphilis showing perivascular cell infiltration. (× 250.)

FIG. 8.

Section of the brain from experimental sleeping-sickness showing small blood-vessel with perivascular cell infiltration. (× 250.)

FIG. 9.

Section of brain in general paralysis showing longitudinal section of vessel with active proliferation of plasma cells. (× 750.)



the blood and not to the arsenic. But seeing that I have found that intravenous injections and even intramuscular injections of salvarsan may convert a positive Wassermann reaction of the fluid in general paralysis into a negative reaction, and thus account for the improvement, it is necessary that the serum of another individual who had received an intravenous injection of salvarsan should be injected into the lumbar subarachnoid sac before it could be claimed that the antibodies in the serum were the cause of the improvement. Dr. Swift, of the Rockefeller Institute, who claims to have obtained very hopeful results by this method of treatment in tabes dorsalis, said at the International Medical Congress that he had done this with equally satisfactory results. If this be true it would appear that mercury and arsenic are spirillocidal either by causing the development of antibodies or by furthering their spirillocidal action. Dr. George Robertson, of Morningside Asylum, from his experience, does not claim to have attained a cure, and is quite judicial in his statement regarding the effect of this treatment in general paralysis, for he says:—

> Although success has not been obtained there are hopeful indications, for it appears that the disease process, if not suppressed, is at least touched in half the cases. The decrease in the lymphocytosis, the diminution in the intensity of the Wassermann reaction, and its disappearance for over a year in some cases are hopeful signs of the most convincing character.

Dr. Fisher, of the Rockwood Hospital, Kingston, Canada, who for some months past has been working under my direction at the Pathological Laboratory, Claybury, had the idea of treating general paralysis by this method, and in the spring of 1912, by the kindness of the superintendent, Dr. Ryan, Dr. Fisher took 7 cases of advanced general paralysis and rendered the blood negative to the Wassermann reaction by repeated intravenous injections of salvarsan. Then under rigid antiseptic precautions he withdrew 15 to 20 c.c. of blood from the median basilic vein of the patient's arm, placed this in a cool chamber for one hour, separated the clot, and centrifuged the serum for half an hour in sterile tubes. Next he performed lumbar puncture and withdrew cerebro-spinal fluid of an amount equal to that of the serum to be injected, which is slowly introduced, being kept at the body temperature. The patient is allowed for one hour to lie flat on his back without a pillow and with the foot of the bed raised. This treatment was repeated every week for the first three months, then every two weeks for the next four months. No untoward symptoms occurred in any of the cases under treatment, and he has learned that the cases have greatly improved, and apparently there has been an arrest of the symptoms so far.

In the Oliver-Sharpey lectures which I delivered at the Royal College of Physicians of London in April, 1910, I gave many reasons from experiment and observation why it seemed probable that the cerebro-spinal fluid functions as the lymph of the brain. I also pointed out that, inasmuch as normally it contains no proteids or cell elements, if microbial invasion occurred it tended to spread rapidly because the fluid normally contained no bactericidal action nor leucocytes capable of combating microbes. These experiments of introducing serum of patients, which presumably contains antibodies, rest therefore upon a scientific basis if my conclusions are correct. At the same time it is difficult for the serum to arrive at the crannies in the cortex by injecting it by lumbar puncture into the subarachnoid space, for Goldmann's researches with trypan blue show that the cortex is unstained when the dye is introduced by lumbar puncture. He found, however, that the cortex is well stained when the dye is introduced by trephining the calvaria. It is possible that by repeated injections, as in Dr. Fisher's experiments, the antibodies may reach the cortex by lumbar puncture. Goldmann's work, however, shows the desirability of trying the method of introducing the serum directly into the subdural or subarachnoid space of the cortex. Unfortunately, I have not the authority to try this in my capacity of pathologist to the London County Asylums.

THE WASSERMANN REACTION.

I have already mentioned that in practically every case of general paralysis a positive Wassermann reaction is obtainable in the cerebro-spinal fluid, whereas not more than 50 per cent. of the cases of tabes yield a positive reaction. Why is this? In my opinion the reaction in the cerebro-spinal fluid is evidence of the existence of the parasites or their toxins in the central nervous system. I consider that it is the toxins produced by the active generation of the parasites which cause the reaction, the degeneration of the neurones, and the active proliferation of the lymphocytes, plasma cells, and neuroglia cells. For several reasons I consider it is a reaction of the neurones which gives rise to the euglobulin in the fluid that serves as a complement fixative. Firstly, because the toxins of other specific organisms, for example, tubercle, give rise to lymphocyte, plasma cell, and neuroglia proliferation without producing complement fixative in the fluid. Secondly, because some cases—in fact, the majority of cases of cerebro-spinal syphilis, even cases with active meningitis and enormous numbers of lymphocytes in the fluid—nevertheless give a negative Wassermann reaction, and there is no complete parallelism between lymphocytosis and degree of complement fixation. The experiments of Levaditi and Yamanouchi, however, show that it is the toxin of the spirochætes, and not the parasites themselves, which induces the typical lymphocyte and plasma cell reaction. Thus they introduced a small portion of infected cornea of a rabbit containing abundant spirochætes into the anterior chamber of the eye of a healthy rabbit, and they observed a characteristic cell reaction in the cornea of the normal rabbit before there was an invasion by spirochætes. This experiment shows that a localised nest of spirochætes in the cerebro-spinal axis or even outside the central nervous system, provided the toxins can be conveyed by lymphatics, can set up the characteristic cell reaction in the perivascular spaces of the nervous system, each fresh dose of toxin leading to a remission of symptoms and decay of nervous structures.

We know that normally the choroid plexus does not let this toxin pass into the cerebro-spinal fluid any more than it does the antibodies, for the blood may give a very strong reaction in cases of syphilis, and yet the cerebro-spinal fluid not show the slightest trace of reaction. Now the cerebro-spinal fluid in great part is secreted by the choroid plexus into the lateral ventricles; consequently fluid withdrawn from the lateral ventricles should give a less marked reaction than that withdrawn by lumbar puncture, for the latter would have been in contact longer with the nervous tissue. Acting

upon this hypothesis I asked my assistants, Dr. Candler and Mr. Mann, to examine a number of cases to test its validity. In 38 cases the fluid was withdrawn as soon after death as possible from the lateral ventricles and by lumbar puncture; the result obtained in all the instances was to show that the fluid obtained by lumbar puncture was from two to ten times as strong in linking up complement as that from the ventricles. Doubtless, if the fluid could be obtained as it was secreted during life into the lateral ventricles no specific globulin would exist in it.

Tabes being a much slower decay of the neurones, and limited to the posterior spinal afferent neurones in the great majority of cases, presumably is occasioned by small doses of toxin finding entrance to the posterior columns by limited and defined channels; indeed, it is conceivable that the syphilitic toxin may arise in lesions of the thoracic or abdominal aorta which, passing along the lymphatics of vessels, gains access to the lymphatics of the spinal cord, the circulation of the lymph being along the course of the afferent roots. This seems probable from the experiments of Orr and Rows, who have, by tying celloidin capsules containing microbial toxins on the sciatic nerve, produced a perivascularitis in the posterior columns with degeneration of exogenous afferent systems like those of tabes. Possibly the perivascular lymphatics of the carotids may convey toxins or even the specific organisms to the fronto-central region of the brain in cases of general paralysis. This is a not improbable source of infection, for if skin lesions of syphilis are rare in this disease, syphilitic nodular fibrosis of the aorta is extremely common.

Lesions in Early and Late Stages.

A comparison of the lesions of syphilitic disease of the brain and cord in early stages after infection with those occurring late, on an average 10 years after infection, shows that in both there is the same perivascular infiltration with lymphocytes and plasma cells; this is the reaction to the toxin produced by the parasite. In syphilitic brain disease there is also an endarteritis, sometimes localised, sometimes universal, and it is the blocking of the vessels by this inflammatory condition, especially when associated with thrombotic occlusion, which occasions the symptoms of so varied and obtrusive a character and sudden in onset. So also in focal meningomyelitis the localised decay of neuronic structure giving rise to paraplegia is due to obliterative endarteritis more than to the meningeal and peri-vascular inflammatory changes. If the vessels are not damaged extensively remarkable curative results by specific treatment are obtainable. The Argyll-Robertson pupil so characteristic of tabes and general paralysis is not seen.

In general paralysis examination of the vessels of the brain seldom shows any evidence of endarteritis; if there is any extensive vascular inflammation it is in the capillaries, where undoubtedly the endothelium undergoes active proliferation and budding; the reason for this cannot be the toxin circulating in the blood, otherwise the endothelium of the arteries and veins would show it. Probably the specific toxin is in all the interstices of the nervous tissue wherever the cerebrospinal fluid irrigates; thus it comes in contact with the capillary endothelium and excites its active proliferation, with capillary blood stasis, a histological condition that is especially characteristic of general paralysis.

I have met with a few cases of syphilitic brain disease which have terminated in typical general paralysis, and Straussler has reported several. A striking feature of general paralysis and the most consistent naked-eye phenomenon, which is not seen to anything like the same degree in syphilitic brain disease nor in sleeping sickness, is the granular condition of the ventricles, especially the fourth ventricle. This indicates the prolonged existence of an irritant toxin in the cerebrospinal fluid. The greater the wasting of the brain the more pronounced is this change. The wasting of the fronto-central convolutions and of the whole cerebral cortex, but to a less degree, is a characteristic feature of this disease (general paralysis) as compared with syphilitic brain disease. Doubtless this is in part due to the vascular changes, but inasmuch as in sleeping sickness the perivascularitis and meningitis may be as extensive as, and even more universal and extensive than in general paralysis, it must be concluded that there is also in this disease a primary and progressive decay of the neurones, owing to the continuous action of the toxin sensitising the nerve cells and causing them to react to such a degree that the normal metabolic equilibrium is destroyed and degeneration ensues, so that we have, as Noguchi asserts, a parenchymatous encephalitis.

The Incidence of General Paralysis in the Population of London.

If it could be assumed that 2–3 per cent. of persons who acquired syphilis developed general paralysis it might help us to estimate approximately the extent of syphilis in a population; for inasmuch as general paralysis is a disease fatal within a few years of admission to the asylum accumulation of cases suffering from this disease does not occur, consequently the death-rate per annum is about equal to the admission rate. I will throw on the screen a lantern slide showing the incidence of general paralysis in the general admissions to the London County Asylums during the years 1911–1912 from the parishes north and south of the Thames, east and west; I will point out the main results which these tabulated statistics show.

North of the Thames—West-end parishes. Total population equals 1,376,083. Male admissions 1183; of these 205 were general paralytics, so that the percentage of paralytic male admissions is 17·3. Female admissions 1236; of these 31 were general paralytics, so that the percentage of paralytic females is 2·5. So that general paralysis is seven times as frequent in males as compared with females in West-end parishes north of the Thames.

North of the Thames—East-end parishes. Total population equals 1,282,911. Male admissions 930; of these 123 were paralytics. so that the percentage of paralytic male admissions is 13·2, against 17·3 in the West-end parishes north of the Thames. Female admissions 981; of these 34 were general paralytics, so that the percentage is 3·4 in eastern parishes north of the Thames, against 2·5 per cent. in the West-end.

In West-end parishes north of the Thames we will find that 1·75 per 1000 residents were admitted in the two years, and of these 9·7 per cent. were general paralytics. In East-end parishes north of the Thames 1·49 per 1000 were admitted in the two years, and of these 8·2 per cent. were general paralytics.

In West-end parishes south of the Thames the results obtained are somewhat different, for both males and females have a higher percentage of general paralytics in the western parishes;

however, this quite accords with the character of the population in Wandsworth and Lambeth.

In the western parishes the total population is 777,321. The male admissions are 537; of these, 97 are paralytics, a percentage of 18·3. The female admissions are 641; of these, 20 are general paralytics, percentage 3·1. Both male and female incidence of paralysis are high.

In the eastern parishes the total population is 1,066,989. The male admissions are 741; of these, 102 are paralytics, a percentage of 13·7. The female admissions are 825; of these, 23 are paralytics, a percentage of 2·7.

The western parishes are higher in both male and female paralytics; in the former 10 per cent. of the total admissions are paralytics, to 7·9 per cent. in the latter.

These facts entirely agree with what we know of the incidence of general paralysis in the two sexes from practice—viz., the lower we go in the social scale the more common becomes this disease in the female sex; whereas general paralysis is common to all grades of society in the male sex, it is very rare in the better and respectable classes of females in all grades of society. Probably these statistics give a rough idea of the relative prevalence of syphilis in the two sexes.

We may conclude, therefore, that syphilis is commoner in the West-end among males and in the poor East-end among females. Seeing that a very considerable number of paralytics in the West-end do not come into the county asylums it may be assumed that the ratio of six males to one female is well under the mark.

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PLAGUE RATS AT SEATTLE.—Seattle, the largest port on Puget Sound, the northernmost of the large ports on the Pacific seaboard of the United States, has found plague rats and is now anxious about possible danger. At this point it becomes at once clear what a strength their public health service is to the United States. Instead of anxiously advertising for casual doctors to assist them, they get an additional officer of the service detailed from San Francisco for duty at Seattle, and have many others, experts at this particular work, to help them if required. No plague rats have been so far observed in the neighbouring British Columbian ports, Victoria (60 miles away), and Vancouver (100 miles north), but the Seattle papers are tartly suggesting that that is perhaps only because they have not been looked for, and that the quarantine suggested against ships from Seattle is unnecessary.

GONORRHŒA PHYLACOGEN:

REPORT ON AN INVESTIGATION INTO ITS VALUE IN THE TREATMENT OF SOME GONOCOCCAL INFECTIONS.

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FOR the opportunity of making this investigation I am indebted to the Editor of THE LANCET, who suggested it and provided me with a supply of the remedy.

Phylacogen is the trade name applied to a series of solutions of bacterial products prepared according to the directions of Dr. A. F. Schafer (California), their inventor. Dr. Schafer's theory is that every bacterial disease is due to mixed infection. The micro-organism to which the disease is usually attributed may preponderate, but others which are commonly found in the body play some part in producing the symptoms which the patient displays. Accordingly, the attack must be directed not only against the specific germ but also against a host of others which assist or are assisted by it. According to a handbook issued by the firm responsible for its manufacture, a basic phylacogen is prepared by mixing together filtrates (through porcelain) of cultures of "staphylococcus pyogenes (albus, aureus, and citreus), streptococcus pyogenes, bacillus pyocyaneus, diplococcus pneumoniæ, bacillus typhosus, bacillus coli communis, bacillus diphtheriæ, streptococcus rheumaticus, and streptococcus erysipelatis." This mixture constitutes "mixed infection phylacogen" and enters into the constitution of each of the specific phylacogens (erysipelas, gonorrhœa, pneumonia, and rheumatism). Each of these is prepared by mixing together equal parts of "mixed infection phylacogen" and the filtrate of a pure culture of the specific micro-organism. It will be realised, therefore, that phylacogens are not exactly vaccines in the commonly accepted sense of the word, since they contain no solid bacteria. They are more analogous to the toxins which are used for the manufacture of antitoxins. It is not intended here to discuss Dr. Schafer's theory, but to relate the results of a short experience of gonorrhœa phylacogen and to offer some comments on the progress of the patients who were treated with this remedy as contrasted with that of similar cases treated by ordinary methods. It is necessary first, however, to make a few remarks on the administration of gonorrhœa phylacogen and on its side-effects.

Methods of Administration and Dosage.

According to the recommendations issued by the makers, gonorrhœa phylacogen may be administered subcutaneously or intravenously, the former for choice, and always for the initial dose. The intramuscular method is not recommended, but the reason for this is not stated, nor is it quite clear, unless it is for reasons of safety. In the series of cases related below I employed the intramuscular as well as the subcutaneous and intravenous methods and found that, while the therapeutic effect of the subcutaneous injection was in no way superior to the intramuscular, the local reaction which followed the intramuscular injection was more bearable than that which followed the subcutaneous, especially when large doses were employed.

With regard to dosage, for subcutaneous injection the original recommendation was to commence

with 3–5 c.c. and increase to 10, 15, or even 20 c.c., but in a later pamphlet the makers now recommend smaller doses than this—1 or 2 c.c. at first, increasing each dose by 1 or 2 c.c. till a maximum of 10 c.c. is reached. For intravenous injection it is now recommended to commence with 0·125 c.c. to 0·25 c.c., increase very gradually till a dose of 1 c.c. is reached, and thereafter by increments of 1 c.c. to a maximum of 5 c.c., avoiding if possible any marked constitutional reaction. The interval which is recommended between doses is 24 hours or less unless a marked reaction follows the injection, when it may be prolonged to a maximum of 48 hours. A longer interval is deprecated on account of the likelihood of relapse, and for the same reason it is urged that the injections be prolonged till at least 10 days after the patient is relieved of his symptoms.

I have endeavoured to follow these directions as closely as circumstances would allow, but for obvious reasons have not felt justified in prolonging the treatment in cases where it was clear that the remedy was having no effect on the disease. As will be mentioned, the reaction after an injection of gonorrhœa phylacogen is often distinctly unpleasant, and it is not justifiable to repeat this indefinitely when there appears to be no hope of compensatory benefit.

Reaction following Injections of Gonorrhœa Phylacogen.

After subcutaneous, and to a less extent after intramuscular, injection, the site of the injection becomes distinctly painful, the discomfort depending largely on the size of the dose and to a certain extent on the patient. Frequently it lasts well into the following day and may deprive the patient of his sleep. The general symptoms depend on the size of the dose, the patient, and the method of administration. As a general rule, intravenous injections are followed by more constitutional disturbance than intramuscular or subcutaneous. Within an hour or two of the injection there is generally a feeling of chill, and, especially after the first few intravenous injections, this may increase to a definite rigor. The temperature rises to a variable height by the same evening. Generally it reaches 100° to 101° F., but in some of my cases it rose to 104°, and in one case an intramuscular injection of 10 c.c. was followed by a temperature of 105·6°. Most of my patients who received intravenous injections suffered from headache, which was often so severe as to make them prefer the pain following an intramuscular or subcutaneous injection. The majority of patients seem to develop some tolerance to the remedy, the reaction following later not being so severe as after the initial doses.

I have treated with gonorrhœa phylacogen 16 cases, including 1 case of gonococcal arthritis and 10 of epididymitis, and the history of each of these is briefly related below. In cases where it was not contra-indicated patients suffering from urethritis received appropriate local treatment in addition. To avoid unnecessary repetition, by "phylacogen" is meant "gonorrhœa phylacogen" in the following case reports.

CASE 1.—Gonococcal arthritis two days, with very severe pain in the left hip, both knees and both ankles. Moderate swelling of visible joints. Purulent urethral discharge containing fairly numerous gonococci. Intramuscular injection of phylacogen 3 c.c. was followed on the next day by considerable relief of pain in all joints. During the succeeding four days intravenous injections of 1 c.c., 2 c.c., 3 c.c., and 4 c.c. Stiffness and pain completely disappeared and the joints became less swollen; urethral discharge containing gonococci in fair numbers persisted. Five days later return of pain and swelling in the right ankle. Seven intravenous injections of 3 c.c. phylacogen on successive days, during which pain disappeared from ankle, but the right wrist became affected on the second day and the left knee on the seventh day. Intramuscular injection of 10 c.c. phylacogen was followed by relief of all pain. Subsequent progress towards recovery was uneventful.

The history of this case, unfortunately the only one of gonococcal arthritis which I have had an opportunity of treating with phylacogen, appears to support those published by others in testifying to the good effect of phylacogen on gonococcal arthritis.

CASE 2.—Gonorrhœa 8 weeks; epididymitis 1 week. Testicle considerably swollen and rather tender, but no marked pain. Intramuscular injection of 3 c.c. phylacogen. Testicle on following day more painful. Seven intravenous injections of phylacogen during the following 13 days in doses rising from 1 c.c. by increments of 1 c.c. to a maximum of 3 c.c., the injections being generally on alternate days on account of the severity of the reactions. Swelling gradually abated but returned with slight pain on the day after the last of these injections. Intramuscular injection of 10 c.c. phylacogen was followed by relief of all pain. The patient was discharged from hospital a week later for special reasons, the testicle being then about twice the normal size but free from discomfort.

CASE 3.—Gonorrhœa 2 years, with frequent relapses of acute urethritis. Epididymitis 3 days, with severe pain and swelling. Intramuscular injections of 10 c.c., 15 c.c., and 20 c.c. phylacogen during first four days; the testicle became slightly smaller and more comfortable. Intramuscular injection of 20 c.c. phylacogen two days later and six subcutaneous injections of 5 c.c. phylacogen on successive days. Progress much the same as in similar cases treated without vaccine. Urethral discharge continued, with fairly numerous gonococci.

CASE 4.—Gonorrhœa 21 days; epididymitis one day. Five subcutaneous injections of phylacogen in doses increasing from 1 c.c. to 4 c.c. on alternate days. Local and general reaction after each injection fairly severe. Progress apparently uninfluenced by phylacogen.

CASE 5.—Epididymitis one day, with considerable pain and swelling. Intramuscular injection of 5 c.c. phylacogen followed by four intravenous injections on successive days and in doses increasing from 1 c.c. to 3 c.c. Each injection followed by severe reaction. No improvement. Two days later intramuscular injection of 15 c.c. phylacogen was followed by considerable relief of pain. Dose repeated two days later, but two days after this severe relapse of pain and swelling. Phylacogen discontinued and polyvalent stock vaccine commenced in weekly doses. This was followed by steady improvement and there was no further relapse. In this case a large dose of phylacogen seems to have relieved pain, but steady administration of the remedy failed to prevent a severe relapse.

CASE 6.—Gonorrhœa 21 days; epididymitis 4 days. Epididymis moderately swollen, rather tender, but not very painful. Three intramuscular injections of 10 c.c. phylacogen on alternate days, each injection being followed by severe reaction. Testicle on the fifth day not so tender. From the seventh to the thirteenth day of phylacogen treatment six subcutaneous injections of phylacogen, commencing with 1 c.c. and increasing by 1 c.c. to a maximum of 5 c.c. Relapse of pain and swelling on the thirteenth day. Subcutaneous injections continued on fourteenth and fifteenth days. Testicle became more comfortable, but remained considerably enlarged. Urine on the fifteenth day showed numerous threads containing gonococci.

CASE 7.—Gonorrhœa 6 weeks; epididymitis 2 days, with considerable pain in vas deferens. Had previously suffered from metastatic gonococcal conjunctivitis, which cleared up under ordinary vaccine treatment. Intramuscular injections of 4 c.c., 5 c.c., 6 c.c., and 8 c.c. phylacogen on first four days. Pain in the vas disappeared after first injection, but returned on the fifth day, with increase of pain in the

epididymis. Intramuscular injections of 10 c.c. phylacogen on the sixth and eighth days were followed by great relief of pain. After five intravenous injections of 1 c.c. to 3 c.c. phylacogen during the succeeding week epididymis was free from pain, but about twice its normal size.

CASE 8.—Gonorrhœa three months. One month after infection commenced very severe epididymitis, which was treated with vaccine and puncture of the epididymis. Testicle had become practically normal, but phylacogen treatment was commenced on account of slight return of pain and swelling, threatening a relapse of epididymitis, and to observe its effect on persistent gleet. Intramuscular injection of 2 c.c. phylacogen was followed by disappearance of pain. Two days later intramuscular injection of 5 c.c. phylacogen, and during the following week five intravenous injections in doses rising by increments of 1 c.c. to a maximum of 3 c.c. At the end of this time a small nodule remained in the epididymis and gleet persisted, with gonococci as numerous in the discharge as before commencing injections with phylacogen.

CASE 9.—Gonorrhœa 2 months; epididymitis 1 month. Epididymis no longer tender, but generally hard and slightly enlarged. Urethral discharge containing gonococci. Phylacogen given to test its effect on the gleet and in hastening resolution of the epididymitis. Intramuscular injection of 5 c.c. phylacogen followed by three intravenous injections of 1 c.c. to 3 c.c., and then an intramuscular injection of 15 c.c. phylacogen. No apparent effect on gleet or epididymis.

CASE 10.—Gonorrhœa 5 weeks; epididymitis 3 weeks. Epididymis no longer painful, but hard and generally enlarged. Phylacogen given to test its effect in hastening resolution. Subcutaneous injections of 3·5 c.c. and 5 c.c., intramuscular injections of 6 c.c., 8 c.c., 10 c.c. and 10 c.c. on first, second, third, fifth, sixth, and eighth days. Five intravenous injections of 1 c.c. to 3 c.c. on succeeding five days. Progress towards recovery the same as in cases treated on ordinary lines.

CASE 11.—Gonorrhœa 18 months, with interval of freedom from symptoms for 12 months. Epididymitis 2 months, with muco-purulent discharge containing numerous gonococci. On commencement of phylacogen treatment epididymis slightly enlarged, but free from pain and tenderness. Urethral discharge persistent. Eight intramuscular injections of phylacogen on alternate days, commencing with 5 c.c. and increasing steadily to 20 c.c. No apparent effect on urethral discharge or in hastening resolution of epididymitis.

CASE 12.—Gonorrhœa 5 weeks. Gleet, with fairly numerous gonococci in discharge. Intramuscular injections of 3 c.c., 4 c.c., and 5 c.c. phylacogen on successive days; five intravenous injections, increasing from 0·5 c.c. to 3 c.c. during the following week, each of these being followed by marked reaction with severe headache. An attack of influenza then intervened and phylacogen was discontinued for a week. On resumption of phylacogen discharge still persisted, but disappeared after two further intravenous injections of 3 c.c. The disappearance of the discharge in this case may possibly have been due to the phylacogen, but sudden disappearance of urethral discharge at this stage of the disease is fairly common in cases treated by other methods.

CASE 13.—Gonorrhœa 3 weeks. Para-urethral abscess 1 cm. behind the glans penis 2 weeks. During this time the swelling had decreased from about the size of a butter-bean to that of a pea. Urethral discharge containing fairly numerous gonococci. Two intramuscular injections of 3 c.c. and 4 c.c. and eight intravenous injections of 0·5 c.c. to 3 c.c. phylacogen on successive days. At the end of this time the swelling was of the size of a grape seed, and the discharge was still present, with gonococci in approximately the same numbers as before commencing phylacogen treatment.

CASE 14.—Gonorrhœa 6 months. Slight urethral discharge containing scanty gonococci (about one pair in ten fields). Ten subcutaneous injections of phylacogen in doses increasing gradually from 1 c.c. to 5 c.c. on successive days, the larger doses being followed by severe local reaction. Discharge and numbers of gonococci apparently unaffected.

CASE 15.—Gonorrhœa 6 days; lymphangitis of the penis, with considerable pain in and swelling of the penis. Intramuscular injection of 7 c.c. and intravenous injection of 2 c.c. phylacogen on successive days were followed by no relief. Hot sitz baths were ordered. Pain was considerably easier on the third day; sitz baths were continued. Intravenous injections of 3 c.c. and 4 c.c. phylacogen on third and fourth days, by which time all pain and swelling had disappeared. Return of pain and swelling on the sixth day. Intramuscular injection of 10 c.c. phylacogen was followed by disappearance of pain. Urethral discharge continued unabated, with numerous gonococci. No phylacogen administered from the eighth to the fourteenth days, by which time discharge had become rather more profuse. Intramuscular injection of 10 c.c. phylacogen was given on the fourteenth day, followed by nine subcutaneous injections of 3 c.c. At the end of this time signs of abscess of the left lobe of prostate showed themselves in severe pain on micturition and a rapid rise of temperature to 104° F., and on the following day there was considerable pain in the right thigh and knee. Phylacogen treatment was discontinued as small doses had failed to avert the complications mentioned, and the patient was too unhappy to risk the addition of the severe reactions which follow larger doses of phylacogen. Ionisation of the thigh and knee with salicylic ions was followed by immediate relief of pain there, and four days later the prostatic abscess burst into the urethra.

CASE 16.—Gonorrhœa 2 weeks; acute prostatitis 4 days, with very severe pain and no sleep for two nights. Intramuscular injection of 5 c.c. phylacogen was followed by complete relief of all pain. At the same time the urine became loaded with pus. Phylacogen continued for one week with daily intramuscular injections in doses increasing to 10 c.c. It was then omitted for one week, at the end of which time the prostatic pain returned. An intramuscular injection of 10 c.c. phylacogen was again followed by complete relief of the pain. Subsequent progress uneventful.

It would appear from the above cases that in my hands phylacogen has been chiefly successful in relieving pain, and this was especially marked in the case of gonococcal arthritis. In this case also it appears to have hastened recovery, but the same cannot be said for its effect on urethritis and epididymitis, and I have not been able to convince myself that it has any particular therapeutic value in these forms of gonococcal infection. Possibly my lack of success has been due to errors in the administration of phylacogen. If so, I can only hope that others, profiting by my mistakes, may achieve greater success. As far as can be judged from such a limited experience, the effect of phylacogen in relieving pain seems to be more marked after large than small doses, and it is possible that this is because the former are followed by more febrile reaction, which, temporarily at any rate, inhibits the activity of the gonococcus.

I have made a large number of tests to ascertain whether the blood serum of patients suffering from gonococcal infections deviates complement in the presence of phylacogen as antigen, but by a method which is sufficiently delicate to demonstrate antibodies to ordinary gonococcal antigen in most cases of ordinary gonorrhœa I have failed to demonstrate antibody to phylacogen. Possibly this is because phylacogen contains antigen in such a weak dilution that it cannot be used as antigen in a complement deviation test. The presence of phenol in the commercial product puts a limit on the amount of it which can be used in a complement-deviation test, and it would be interesting to test it after concentration and in the absence of phenol.

RADCLIFFE INFIRMARY, OXFORD.—The Chancellor of the University of Oxford, Lord Curzon of Kedleston, will open the new buildings of the Radcliffe Infirmary on Wednesday afternoon, Nov. 26th, at 2.30 o'clock, after luncheon in the hall of Queen's College.

REPORT AND REMARKS ON A SMALL EPIDEMIC OF POLIOMYELITIS,

OCCURRING IN THE PRACTICE OF G. H. JONES, M.R.C.S. ENG., L.R.C.P. LOND., AND G. M. W. HODGES, M.B., B.S. LOND., OF DEDDINGTON, OXON.[1]

BY PAUL B. ROTH, F.R.C.S. ENG.,

SURGEON, KENSINGTON AND FULHAM GENERAL HOSPITAL; SENIOR ORTHOPÆDIC CLINICAL ASSISTANT, LONDON HOSPITAL.

THIS epidemic consisted of six cases,[2] which occurred in five small villages around Deddington between August 9th and Sept. 15th, 1911. There was no death.

The sex, age, and order of attack of the cases are best shown in the following table:—

Case.	Age.	Sex.	Date of Onset.
1	8½ years	Boy	August 9th
2	1 10/12 ,,	,,	13th.
3	9/12 year	,,	16th.
4	4 years	Girl	,, 17th.
5	1 year	Boy	Sept. 11th.
6	10/12 ,,	,,	,, 15th.

Nature of onset.—Case 1: Occipital headache, head retraction and vomiting, temperature 103·2° F. Cases 2 and 3: Fever and vomiting. Case 4: Fever, headache, and vomiting. Case 5: Fever and drowsiness, temperature 101·4°, and according to mother headache. Case 6: Fever and restlessness, temperature 103–105°, and according to mother headache. Cases 1 and 6 may be regarded as severe cases, the others as slight ones. In all except one the acute symptoms lasted 2–4 days, and were then followed by pain and paresis; the pain in the affected limbs was a marked feature. As the pain and paresis developed the acute symptoms gradually subsided. In Case 6 there was pain for 6 days, and temperature 103–105°, after the appearance of paralysis. In Case 1 there was an unusual symptom, urinary retention.

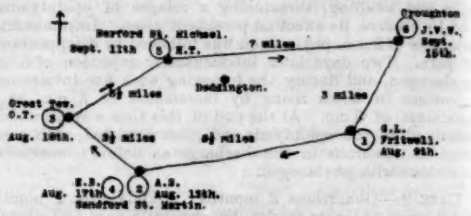
Parts affected.—Case 1: Both legs, right shoulder, arm, and forearm. Case 2: Both legs. Case 3: Both legs and perhaps erectores spinæ. Case 4: Left leg, both forearms, right side of face, right external rectus causing internal strabismus. Case 5: Right shoulder muscles and sterno-mastoid causing typical wryneck. Case 6: Both legs and erectores spinæ.

Recovery (as observed in July, 1913).—Case 1: The right leg recovered to some extent, the shoulder girdle, arm, and left leg remaining the same. Case 2: Made an excellent recovery, but there is a fair amount of wasting in the left thigh. Case 3: Now has only slight foot-drop in one foot. Case 4: Made a perfect recovery with the exception of the face, in which, however, she lost the strabismus. Case 5: The sterno-mastoid recovered, but the shoulder muscles remain paralysed. Case 6: Made a good recovery; now "tends to trip with left foot owing to the slight foot-drop."

Remarks on the mode of infection.—The question of how the infection could have been conveyed in this epidemic is of interest.

Dr. Hodges says: "The cases were somewhat widely scattered, only Case 4 and Case 2 occurring in the same village, and these two lived under entirely different conditions and had never met. They were attacked only four days apart. It is certain none of the cases met each other before their attacks either at school or at school treats, nor had their parents met. The half-sister of Case 2, however, attended the same school as the family of Case 4." Dr. Hodges has made a rough diagram, which I have slightly altered (Fig. 1), to

FIG. 1.



Sketch map showing distribution of cases. The black dots indicate villages.

demonstrate the distances between the cases. A glance at it at once shows (1) the impossibility of direct infection in these cases; and (2) that the cases were affected one after the other in a circular manner.

In one of his letters to me Dr. Hodges wrote: "*The only point in their environment which is the same in all cases is the close proximity of stables.*" Thus in Case 1 there is a cattle-yard immediately behind the house; Case 2 lives in a lodge by the stable-yard of S—— Park; Case 3's father is a farmer; Case 4's father is a farm labourer; Case 5's father is a blacksmith; and Case 6 lives in a cottage with a stable immediately behind it.

That this environment may be of extreme importance is shown by the work of Dr. Milton J. Rosenau, of Harvard Medical School, whose experiments have been confirmed by John F. Anderson and Wade H. Frost.[3] They say:—

> To summarise, three monkeys exposed daily to the bites of several hundred Stomoxys, which at the same time were allowed daily to bite two monkeys suffering from poliomyelitis caused by intracerebral inoculation, developed quite typical symptoms of poliomyelitis eight, seven, and nine days respectively from the date of their first exposure.

That is to say, they demonstrate conclusively that poliomyelitis can be transmitted from monkey to monkey through the agency of this fly. On inquiry I find that the fly Stomoxys calcitrans is also found in large numbers in this country, and in most inhabited parts of the world, tropical as well as temperate. Mr. Ernest E. Austen, of the British Museum (Natural History) writes[4]:—

> (Stomoxys calcitrans)—a species often met with even in the centres of large towns, though commoner in the suburbs and found almost everywhere in the country[5]—is a blood-sucking fly which is sometimes mistaken for Musca domestica (the house-fly), with the result that the house-fly is occasionally alleged to have inflicted a bite, although its proboscis is merely adapted for sucking and is quite incapable of piercing the skin. Though agreeing with the house-fly in length, Stomoxys calcitrans is of a somewhat broader and more thick-set shape (see Fig. 2), and may readily be

[1] A paper read before the Orthopædic Subsection of the Royal Society of Medicine.

[2] Dr. Hodges writes: "At the time of this little epidemic there was to the best of my recollection and as far as I can gather from case-notes, no case of "influenza" in our practice. Another curious point was that we seemed to have a monopoly of poliomyelitis, none of the three other practitioners covering the district having a case."

[3] Transmission of Poliomyelitis by Means of the Stable Fly (Stomoxys calcitrans). Public Health Reports, Oct. 25th, 1912, vol. xxvii., No. 43.

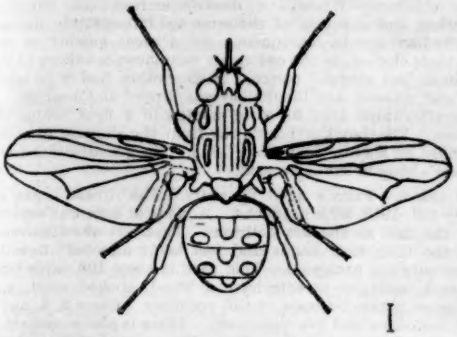
[4] The House-fly as a Danger to Health, 1913.

[5] The geographical range of Stomoxys calcitrans has not yet been fully elucidated, but it is undoubtedly very wide. The species is generally distributed in Europe, and also occurs in North America, where it is said to be very common throughout the inhabited parts. A race of it is found in the Gambia Colony, West Africa, and it has also been recorded as occurring in Hong-Kong, Batavia (Java), Ceylon, and Sydney (New South Wales). A specimen from the Naini Tal District, in Northern India, is indistinguishable from British examples. British Blood-Sucking Flies, by Ernest E. Austen, 1905, p. 59.

distinguished from Musca domestica (see Fig. 3) by the character of its proboscis, which is rigid and slender, and is always visible, projecting like an awl horizontally in front of the head. (Moreover) the fourth longitudinal vein in the wing of this fly, although somewhat bent up at the end, is not sharply elbowed as in the house-fly.

These flies breed in decaying vegetable matter, are found about stables and cowsheds, and are frequently to be seen in large numbers resting on gates and rails and fences. They are most prevalent in August and September. They attack human

FIG. 2.



Sketch of stomoxys calcitrans (female). From "The House Fly," C. Gordon Hewitt. 1910.

beings as well as horses and cattle.[6] The bite is a minute puncture inflicted by the proboscis.

Before giving any opinion on this matter there is one fact to which I must refer—the recent discovery at a place named Borna, near Leipzig, of a disease in horses which seems closely allied to poliomyelitis. This has been named the "Bornasche Krankheit"[7]; a similar disease in horses has also been described in other parts of Germany.

FIG. 3.

Sketch of house fly, musca domestica (female). E, elbow. From "The House Fly," C. Gordon Hewitt. 1910.

Conclusions.—The points to which I wish to direct attention are: 1. "That the infective material (in the laboratory) is very resistant to cold and the disease much more common in warm weather, and yet that the epidemics stop as soon as the cooler weather comes, would suggest that the infection is carried by some insect that is killed or disappears as soon as the summer ends."[8] 2. It has been proved that the disease can be transmitted from an infected monkey to a healthy monkey by the bites of the flies Stomoxys calcitrans. 3. These flies are found in all countries where epidemics of poliomyelitis have been described as occurring. 4. A favourite habitat of the flies is stables and cowsheds. 5. These flies bite horses and cattle and human beings. 6. A disease similar to poliomyelitis occurs in horses. 7. In the epidemic here reported the infection could not possibly have been direct. 8. There were *stables or cattle-yards* very close to the houses of the children affected.

From a consideration of these points I suggest that this epidemic was originated by infected Stomoxys biting Case 1 in the cattle-yard at Fritwell; that the infected patient was bitten by other Stomoxys which in turn became infected and were carried by horses or cattle, or on carts and wagons,[9] to the stableyard at Sandford St. Martin, where two more children were bitten and became infected, and so on through the other three villages. If this theory—viz., the transmission of poliomyelitis by the Stomoxys—should prove to be correct, not only for this particular epidemic, but for all other epidemics of poliomyelitis, then it should be possible, by a wholesale crusade against this species of fly, to banish the disease from large regions of the globe.

Notes of Cases.

CASE 1.—Male, aged 8¼ years, father a farm bailiff, cattle-yard immediately behind house. Onset on August 9th, 1911; taken ill with severe occipital headache, head retraction, and vomiting; temperature 103·2° F. On the 11th the vomiting ceased and the headache was less, when there appeared weakness of both legs with much pain, both knee-jerks were lost, the right plantar reflex was flexor, and the left was absent. Kernig's sign was not present. Temperature 101·6°. On the 13th the boy was very ill. There was constant pain in both legs and the right shoulder, which had now become involved. The muscles chiefly affected appeared to be the extensor group of the thigh and the peroneal in the lower limbs, and the deltoid in the shoulder. Temperature 100·8°. There were retention of urine (catheter passed twice) and obstinate constipation only relieved by enemata. On the 15th the temperature was normal and the pain less; urine was passed naturally, and the bowels were opened with aperients. After-history: The boy gradually improved. In November the following muscles showed the reaction of degeneration—deltoid, coraco-brachialis, biceps, brachialis anticus, triceps, extensor carpi radialis, longior or brevior, in right upper extremity; hamstrings, quadriceps, adductors, tibialis anticus, and gastrocnemius in left lower extremity. He went to the Orthopædic Hospital at Birmingham, with the result that the right leg recovered to some extent, the shoulder girdle, arm, and left leg remaining the same.

CASE 2.—Male, aged 22 months, father a gardener, lives in a lodge by the stable yard of S—— Park. Onset on August 13th, 1911, with fever and vomiting. The child was first seen on the 18th, when there were paresis and pain in both legs, the muscles chiefly affected being the hamstrings on both sides and quadriceps of left thigh. The knee-jerks were absent, the right plantar reflex was doubtful, and the left extensor. After-history: The patient gradually made an excellent recovery, and he now walks well, but there is a fair amount of wasting in the left thigh.

CASE 3.—Male, aged 9 months, father is a farmer. Onset on August 16th, 1911, with fever and vomiting. On the

[6] Mr. T. J. Bold gives instances of extraordinary virulence of the bite of Stomoxys calcitrans in the case of cattle and horses at Long Benton, Northumberland, in September, 1865. Quoted by Mr. Austen, in British Blood-Sucking Flies.

[7] Kolle and Wassermann, Jena, 1913, vol vi., p. 251. (Paper by Professor Joest.)

[8] Remarks by Professor Rudolf (Toronto) on Dr. F. E. Batten's paper read at Birmingham at the British Medical Association annual meeting, 1911, Brit. Med. Jour., Sept. 2nd, 1911, p. 492.

[9] It is unlikely that they could have flown such a distance. See An Experimental Investigation on the Range of Flight of Flies, by S. Monckton Copeman, M.D., F.R.S., F. M. Howlett, B.A., F.E.S., and Gordon Merriman, Reports to the Local Government Board on Public Health and Medical Subjects, New Series, No. 53. Quoted by Mr. Austen, loc. cit., 3.

18th there were pain and paresis of the quadriceps and hamstrings of both thighs. The knee-jerks were unobtainable; the extensors of the spine were probably involved. After-history: The patient gradually recovered, and now the left leg is half an inch shorter than the right, and there is slight foot-drop.

CASE 4.—Female, aged 4 years, father a farm labourer. Onset on August 17th, 1911, with fever, headache, and vomiting. On the 23rd she was first seen; she complained of pain in both forearms. There was paresis of the extensors of both wrists with double wrist-drop. Very marked right facial paralysis was also present, the orbicularis palpebrarum and muscles of the mouth being especially affected. There was some weakness of the left leg, but no pain. The right knee-jerk was normal and the left diminished; the right plantar reflex was flexor and the left extensor. Temperature 99·4° F. On the 26th right internal strabismus developed. On the 30th the left plantar reflex was flexor, but was obtained with difficulty. After-history: The girl gradually made a perfect recovery with the exception of the face, in which, however, the strabismus was lost.

CASE 5.—Male, aged 1 year, father a blacksmith. Onset on Sept. 11th, 1911, with fever and drowsiness, and the mother says headache. On the 14th the infant was first seen. There were pain and paresis of the right shoulder; the deltoid and sterno-mastoid appeared chiefly involved with typical wryneck. Temperature 101·4° F. After-history: The sterno-mastoid quickly recovered, but there remains paralysis of the deltoid, supra- and infra-spinatus, subscapularis, the upper part of the trapezius, and the coraco-brachialis.

CASE 6.—Male aged 10 months; stable immediately behind the cottage. Onset on Sept. 15th, 1911, with restlessness and fever, and the mother says headache. On the 18th, when the child was first seen, the hamstrings and quadriceps of both thighs were involved with much pain and also the erector spinæ. The pain was too severe to be sure of the knee-jerks. Temperature 104·2° F. The pain was very marked for the next six days, and the temperature remained at 103°–105°. After-history: Eventually the patient made a good recovery and now walks well, but tends to trip with the left foot owing to slight foot-drop. There is some slight wasting of the extensors and adductors of the thigh and the peronei of the leg on the left side.

I am much indebted to Mr. Jones and Dr. Hodges for permission to publish their cases, and to Mr. Austen for valuable assistance in the preparation of this paper.

Harley-street, W.

NOTES OF AN

OUTBREAK OF ACUTE ANTERIOR POLIOMYELITIS AT WEST KIRBY.

BY GEORGE JUBB, M.D. GLASG., D.P.H. OXON.,
ASSISTANT MEDICAL OFFICER, CHESHIRE COUNTY COUNCIL.

THE following cases of acute anterior poliomyelitis were discovered in West Kirby in 1912 and 1913, and as they present some remarkable features in their occurrence it was considered possible that their publication might be of general interest. I am indebted to Dr. J. B. Yeoman, medical officer of health for North-West Cheshire, for his kindness in giving me facilities for investigating the outbreak and permission to publish the results.

West Kirby is an urban district with about 6000 inhabitants, and it is a favourite seaside resort. It occupies a sheltered position at the north-west corner of the Wirral Peninsula. Its sanitary condition is good, it is well paved and well drained, there are a good water-supply, a water-carriage system of sewage removal, and efficient cleansing, dust being removed in covered bins, and there was found no evidence of undue accumulation of manure or other nuisance. Strict inquiries have been made, and no history can be obtained of any case of infantile paralysis having happened in the district prior to the present outbreak, the first case of which occurred on July 11th, 1912. The only antecedent condition which may possibly have some bearing on the origin of the infection was the arrival of a donkey in a verminous condition at the home of the first case. I append a brief history of the cases.

CASE 1.—Male aged 6 years. The illness began on July 11th, 1912, with sickness and pains in the legs. He was treated for rheumatism for a week, and then paralysis of the left leg was discovered. His brother, 5 years old, slept with him till the illness began. Three weeks before the boy's illness his father bought a donkey from Ireland for the children. When the donkey arrived the boy, his brother, and a cousin of the same age immediately climbed on its back and in consequence got a great number of lice on their clothes, as the extremely verminous condition of the animal had escaped notice. Their clothes had to be taken off and washed, and the donkey was clipped and cleansed; it was afterwards kept for three months in a field behind the house. The boy has been away from the district from the middle of May to Sept. 25th, 1913. His grandmother has a baker's shop in the same road.

CASE 2.—Female aged 2½ years. The illness began on July 6th, 1913, with headache. A medical man was sent for on the 8th, as she was delirious. Paralysis was discovered on the 10th, both hands and feet being affected; now the feet only are paralysed. This case is about 100 yards from Case 1, and the parents have a bread, cooked meat, and chipped potato business on the premises. Cases 3, 4, and 5 are customers and live quite near. There is also a connexion between Case 1 and Case 2, as the parents of Case 2 frequently get bread and yeast from the baker's shop associated with Case 1. There are other children aged 15, 13, 11, and 8 years in the house, in which there has been scarlet fever during last summer.

CASE 3.—Female aged 5 years. The illness began on July 28th, 1913, with sickness and vomiting. The child was able to go out on the 28th and 29th, but paralysis occurred on the 30th. This child went to the Presbyterian Sunday School, and its parents were customers of the shop associated with Case 2. Other children are aged 13, 9, and 6 years. There was scarlet fever in the house this summer.

CASE 4.—Male aged 1 year and 3 months. The illness began on August 1st, 1913, with drowsiness; on the 2nd there was headache. The child was ill for a week, and then a medical man was called in and diagnosed bronchopneumonia. At the end of another week it was discovered that there was paralysis of the legs. The other children are aged 13, 12, 9, 5, and 3 years, and go to the Presbyterian Sunday School. The parents are customers of the shop associated with Case 2.

CASE 5.—Female aged 1 year and 9 months. The illness began on August 14th, 1913; the child cried all day. Paralysis was discovered on the 17th. There are no other children. The parents are customers of the shop associated with Case 2. The child was taken to see the patient in Case 3 on August 2nd when this girl was ill.

CASE 6.—Female aged 6 years. The illness began on August 3rd, 1913. On the 4th she had pains in her head and dragged her left foot. On the 7th and 8th she complained of pains in her neck and legs. Both legs were paralysed and the right arm partially. On the 9th she went to a children's hospital. This case occurred about a mile from the previous cases, but in the immediate neighbourhood there are three shops (a baker's, a dairy, and a cooked meat shop) occupied by relatives of the proprietor of the cooked meat shop associated with Case 2. The dairy gets bread from the shop (Case 2) by means of a milk cart and horse. Other children are aged 16, 14, 12, 10, and 8 years. They go to the Presbyterian Sunday School, as do Case 3 and the brothers and sisters of Case 4.

CASE 7.—Male aged 1 year. The illness began on August 6th, 1913, with screaming. On the 9th there was a rash on the buttocks. On the 10th the child was unconscious, and there was retraction of the head, the arms being paralysed and the neck stiff. Other children are aged 11, 8, and 6 years. The father cleans the windows of the cooked meat shop mentioned in connexion with the previous

case as being in this district. This case is in the next road to Case 6.

CASE 8.—Female aged 4 years. The illness began on August 28th, 1913, with drowsiness, and squinting was noticed on the next day. The mother thought there was slight paralysis of the left leg. The child was in bed a fortnight only, and is now running about, but with a marked squint in the left eye. Other children are aged 14, 11, and 6 years. This case is across the road from the previous case.

I do not intend to enter further on the clinical features of the cases beyond drawing attention to the fact that the meningeal type prevailed. For the purpose of the present article the cases are more interesting from the epidemiological point of view.

It will be seen that there was a primary case in July, 1912, and as far as is known no others followed. During 1913 this primary case has been away from the district for treatment of his paralysis from the middle of May to Sept. 25th. Then there was a primary case in July, 1913, followed by three secondary cases in the same neighbourhood, and other three cases (one tertiary and two quaternary) grouped together about a mile away from the primary and secondary cases. It has been suggested to me that the incidence of these cases closely resembles an outbreak of typhus, and if so it seems reasonable to suspect that the spread of both diseases may be effected by means of the same agents—e.g., lice.

In Case 1 the mother definitely attributes the boy's illness to the arrival of the donkey, which, as has already been mentioned, was infested with lice, and it is interesting to note that in a great proportion of previous outbreaks of poliomyelitis there has been an apparent connexion with domestic animals. Seeing that Case 1 has been absent so long from the district this year it is probable that there was a carrier case which carried on the infection to 1913, and this might have been the younger brother if he had an abortive attack, or there may have been other atypical cases in 1912. According to Netter the serum of sporadic cases of poliomyelitis is active for two years, so that the infectivity of recent cases may be fairly prolonged.

There can be little doubt that Cases 3, 4, and 5 were infected from Case 2, though Case 5 might also have been infected from Case 3, which she visited. The infection *might* have been carried by means of flies, but as it is rather a poor neighbourhood it is just as likely that the infection was carried by means of lice.

Case 6 is the first in the third series, and she goes to a Sunday school in the district of the primary and secondary cases, attended also by Case 3 (who is about the same age) and by the brothers and sisters of Case 4. It seems probable that Case 6 was there infected and brought the infection to the new district. Cases 7 and 8 were probably infected from Case 6. There is, however, a direct communication between the two districts by a milk cart from the dairy near the tertiary case, which carries milk to the first district and brings back bread from the shop associated with Case 2. This would appear to be in favour of the theory of infection being conveyed by flies. It is worthy of notice, too, that with all the cases there was an apparent connexion with shops purveying food, and more especially bread. Their milk-supply was diverse and apparently therefore not concerned.

Transmission of the infective agent in poliomyelitis, whether it is a non-motile protozoon or not, certainly does not seem to be aerial, as in most of the West Kirby cases so many other children, presumably susceptible, were exposed to infection without developing the disease or showing signs of illness. In some of the cases other and younger children slept in the same bed with the patient up to the first day or two of the illness, and two of the cases were at an early stage transferred into different children's hospitals and nursed there, in the absence of any special precautions, without other cases arising. If the infection, then, is conveyed by a biting insect, it appears reasonable to suppose that it might just as easily be conveyed by the louse as by a biting fly, and in view of the suspicions raised regarding this possible mode of infection in the West Kirby cases it would seem desirable to secure and collect further information, where possible, bearing on this question.

Chester.

TWO CASES OF ASCITES TREATED BY MULTIPLE PARACENTESIS AND BY FEMORAL DRAINAGE.

BY W. GIFFORD NASH, F.R.C.S. ENG.,
SURGEON TO THE BEDFORD COUNTY HOSPITAL.

THE two cases of ascites here reported present several points of interest, and may for that reason merit a place in the columns of THE LANCET.

CASE 1. *Ascites treated by paracentesis, omentopexy, and femoral drainage.*—The patient, aged 48, a servant in a public-house, was admitted to the Bedford County Hospital on April 29th, 1909, suffering from ascites. She had had two miscarriages at the age of 20, and when about 25 years old she had syphilis, for which she was under treatment for several months. She was then and for several years afterwards a domestic servant. Later she became a barmaid, but denies that she ever drank much alcohol, sometimes going for days without any. Her beverage was stout. For the last seven years she was nearly an abstainer. In 1905 her periods ceased and her abdomen began to swell. Early in 1908 she states that she was in the Samaritan Hospital, London, for three weeks suffering from ascites. Nothing was done. In August of the same year she went into St. Bartholomew's Hospital and was tapped, 14 pints being removed. In January, 1909, at the same hospital 20 pints were drawn off. When she left St. Bartholomew's Hospital she weighed 8 st. in her dressing-gown. She went to her home in Bedfordshire, where on March 26th, 1909, spontaneous rupture occurred at the umbilicus and 30 pints of fluid escaped. The flow continued for a fortnight.

On admission on April 29th, 1909, the abdomen measured 48 inches at the umbilicus. The liver was displaced upwards as high as the fourth rib. There was a soft swelling, 3 inches in diameter, attached to the lower ribs in the mid-axillary line. This was diagnosed as a gumma, and a mixture containing mercury and iodide of potassium was ordered. Paracentesis of the abdomen was performed on the following dates: May 2nd, 1909, 41½ pints; May 23rd, 32 pints; and June 13th, 33 pints. On June 15th the abdomen was opened above the umbilicus and omentopexy performed. There were perihepatitis and perisplenitis. The liver was about the normal size and contained numerous gummata. The spleen was much enlarged and also contained gummata. After this operation the ascites recurred and parencentesis was performed as follows: July 4th, 16 pints; July 25th, 19 pints; August 15th, 18 pints; Sept. 5th, 9 pints; and Sept. 26th, 9 pints. On Sept. 29th she was discharged from hospital and no further medicine was taken.

She returned for paracentesis as follows: Oct. 28th, 1909, 13 pints; Dec. 15th, 14 pints, and on Feb. 18th, 1910, 11 pints. On Feb. 25th a bone bobbin was inserted in the right femoral canal, incisions being made in the middle line of the abdomen and in the femoral region. The wounds healed without any leakage. In all the patient was tapped 14 times and 280 pints of fluid were drawn off.

The patient was examined on March 21st, 1911, exactly a year after leaving the hospital. She looked in excellent health and weighed in her clothes 12 st. 2 lb. The swelling on the ribs had disappeared. There was no ascites. The liver could not be felt, but the spleen was considerably enlarged. No trace of the bobbin could be felt. She was seen on Oct. 25th, 1913, when there was no return of ascities. Her spleen was enlarged, her weight 11½ st., her health was excellent, and she was earning her living as a housekeeper and barmaid.

CASE 2. *Cirrhosis of liver; ascites; femoral drainage; recovery.*—The patient, a barman, aged 43, was admitted to the Bedford County Hospital on March 27th, 1912, suffering from ascites. He had enjoyed good health until Christmas, 1911, when he became jaundiced and his legs and abdomen swelled. He was admitted to St. George's Hospital, London, and tapped on the following dates: Jan. 23rd, 1912, 5 pints; Feb. 6th, 14 pints; Feb. 20th, 16 pints; March 4th, 12 pints; and March 15th 15 pints. There was no ascites when he was admitted to St. George's Hospital, but it developed within a fortnight. He was very ill when he left St. George's and was advised to go to an infirmary.

On admission, under my care, he was jaundiced, the abdomen was much distended, and the legs were swollen. He had considerable dyspnœa. He denied any history of syphilis, and no sign of it could be found. On March 27th he was tapped and 30 pints of fluid evacuated. The liver was then felt enlarged to midway between the costal margin and the umbilicus. Small nodules studded its surface, with one large one in the gall-bladder region. On April 11th the abdomen was again tapped and 17 pints removed. On the 12th a bone bobbin was inserted in the right femoral canal. Owing to re-accumulation of fluid and to prevent tension on the wound the abdomen was tapped on April 21st and 12 pints drawn off. On May 3rd 11 pints and on the 12th 9 pints were withdrawn. On July 13th he left the hospital. There was then no ascites, the liver was still the same size, and there was slight jaundice. From April 1st until he left the hospital a mixture containing mercury and iodide of potassium was given.

On Oct. 27th, 1912, there was still slight jaundice, the liver showed no change, and there was a slight trace of fluid in the abdomen. On Oct. 23rd, 1913, he reported that he was quite well, with no abdominal swelling or jaundice, and that he had returned to work as a barman in the previous July.

In the first of these cases syphilis probably was the main factor in producing the ascites, as there was a distinct history of the disease and the presence of the gumma on the ribs and gummata in the liver and spleen. The occupation of the patient made one suspect alcohol as an additional cause.

In the second case there was no evidence of syphilis except the rather large nodule in the region of the gall-bladder. The occupation and appearance of the man suggested alcoholism. The presence of jaundice and œdema of the legs were also in favour of alcoholic cirrhosis. The fact that the man recovered after repeated tappings and operation is against pure alcoholic cirrhosis, as Rolleston and Hale White[1] are of opinion that such cases seldom survive more than one or, at the most, two tappings. Spontaneous rupture at the umbilicus must be a very rare event, as many authors do not even mention its occurrence.

Alcoholics are such notorious liars that it is very difficult to obtain a history of syphilis, and syphilis may have occurred without leaving any trace behind. It appears to be quite justifiable to try antisyphilitic remedies in any case in which the patient with ascites (due to liver disease) survives two or more tappings. The introduction of a bone bobbin into the femoral canal was originally suggested by Dr. W. Essex Wynter.

Bedford.

[1] Rolleston: Diseases of the Liver, pp. 244 and 280.

POLYVALENT TUBERCULIN AND THE TYPES OF TEMPERATURE REACTION; A NEW TECHNIQUE.

BY HALLIDAY SUTHERLAND, M.D. EDIN.,

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THE design of tuberculin treatment is to induce in the infected organism a general immunity to the toxins of tuberculin in the hope that this will be associated with a relative immunity to the living tubercle bacillus. Immunity to tuberculin does not always mean immunity to tuberculosis. Theoretically the problem is as follows. If tuberculin were identical with the living tubercle bacillus, how should an organism infected with the latter give an immunising response to the first? Again, if the two were entirely different an immunity to the one would not represent an immunity to the other. Therefore, the more a tuberculin corresponds, without absolute similarity, to the infecting tubercle bacillus the more likely is an immunity to tuberculosis to be attained. The late Professor Arloign, of Lyons, used an attenuated living culture to immunise bovines against a lethal dose of a virulent culture. Webb, of Colorado, has injected small quantities of an attenuated living culture of human tubercle bacilli into children. In general vaccine treatment autogenous vaccines have been found most useful. Tuberculins contain either the exotoxins or the endotoxins of the tubercle bacillus. It is possible that a tuberculin might raise the immunity to the endotoxins without affecting immunity to the exotoxins. All who have worked with tuberculin have obtained excellent results in some cases and indifferent results in others. This might be due to the tuberculin employed not sufficiently approximating in its chemical constitution to the tuberculous toxins in the patient's system. On these grounds I began to use in October, 1911, a polyvalent tuberculin of the following constitution in each cubic centimetre—tuberculin Koch, 0·025 c.c.; bovine tuberculin, 0·025 c.c.; vacuum tuberculin, 0·025 c.c.; bovine vacuum tuberculin, 0·025 c.c.; tuberculin T.R., 0·05 c.c.; bovine tuberculin T.R., 0·05 c.c.; bacillary emulsion, 0·033 c.c.; bovine bacillary emulsion, 0·033 c.c.; polygenous bacillary emulsion, 0·034 c.c.; T.O.A., 0·35 c.c.; and P.T.O., 0·35 c.c. (Prepared for me by Messrs. Allen and Hanbury.)

Preparation of dilutions.—Nine dilutions are made from the pure polyvalent tuberculin by measuring 18 c.c. of 0·8 per cent. sterile NaCl solution into sterilised glass-stoppered bottles marked D_1, D_2, D_3, D_4, D_5, D_6, D_7, D_8, and D_9. To the solution marked D_1 add 2 c.c. of pure polyvalent tuberculin and mix well. By adding 2 c.c. of D_1 to the saline solution in the second bottle D_2 is prepared, and so on. Each dilution is thus ten times weaker than its predecessor. The dilutions are made in the cold. With ordinary asepsis they retain their properties for two to three weeks. When the pure tuberculin and its dilutions have stood for some hours the bacterial débris settles as a fine precipitate. If the solution be gently rotated this débris rises like a thin, curling column of white smoke into the supernatant fluid, and forms a perfect emulsion. After two or three weeks the débris in the dilutions will become agglutinated, when fresh dilutions must be prepared. The pure polyvalent tuberculin will retain its properties for

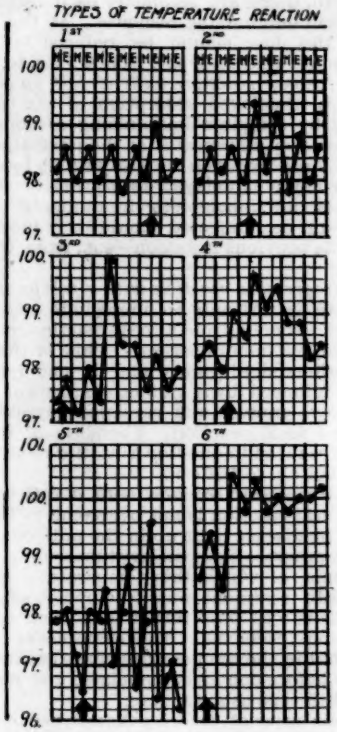
several months. Bacterial contamination of the solutions is indicated by small, round, white, fluffy growths or by surface moulds.

Cases suitable for tuberculin.—It is impossible to consider the selection of cases in terms of a purely anatomical classification (Turbans), and the question is best discussed on the basis of a clinical classification such as Philips's. The following groups are suited for tuberculin treatment. The early tuberculous infections of childhood, as represented by L_1 and L_2, are given tuberculin as a prophylactic. In old arrested lesions, indicated by L_3, tuberculin is employed to prevent a relapse. In L_1s and L_2s we have cases where the active onset is recent, systemic intoxication slight; and again, there are the old-standing chronic cases with little systemic disturbance, represented by L_3s. All these do well on tuberculin. By L_1S we mean early local disease with equivalent systemic intoxication, which should be combated by rest in bed, and when the large S has been converted into a small s, tuberculin may be given either at home or at a sanatorium. In the same way L_2S and L_3S may be treated with tuberculin.

Precautions of administration.—The patient must chart his temperature, and is required to record on his chart the pulse-rate and the daily amount of sputum. Female patients should draw a black line on the chart during the menses, as the menstrual rise might simulate a reaction. Pregnancy is not a contra-indication, even with a slight degree of albuminuria. The temperature should be taken at 8 A.M., 4 P.M., and 8 P.M. While rectal temperatures are most accurate, it is difficult outside a sanatorium to get ambulant patients to take their temperatures in this way, and in these cases axillary temperatures are more reliable than readings in the mouth. Injections are made with a German Record syringe, platinum iridium needle, graduated to 1/50th c.c. The syringe is washed out before and after each injection with pure ether, and the patient's skin may be wiped with ether. The injections are made subcutaneously on the anterior aspect of the upper arm about the middle of the biceps, where the skin is least sensitive and one is able to avoid veins and nerves.

The principles of dosage.—The dose of tuberculin is gradually increased on the assumption that the more the patient can tolerate with safety the greater is the immunising response. A mechanical dosage is impossible since the optimum dose will depend on the patient's condition, and a dose of tuberculin is large or small, according to its relation to the degree of systemic intoxication. The geometrical progression I have found most serviceable is the quarter, and the ten doses in each solution are 0·13 c.c., 0·16 c.c., 0·2 c.c., 0·25 c.c., 0·32 c.c., 0·4 c.c., 0·5 c.c., 0·63 c.c., 0·79 c.c., and 1 c.c. The injections are given once or twice a week according to the patient's condition, and the initial dose is usually D_6 1 c.c. or D_7 1 c.c. The correct dose will adjust the balance on the side of immunity by the relation of the amount of tuberculin injected to the general condition of the patient, of which the first is under our control, while the second may be measured by clinical methods. The early case of slight severity allows a wide margin for error, and to this I attribute not only the brilliant results of careful treatment, but also the benefit which has occurred in spite of haphazard methods. In advanced disease the conditions are very different. The patient is being poisoned by massive doses of toxin from his own system, and the mechanism of immunity is almost in full abeyance. It is reasonable to presume that the dose of tuberculin should be reduced to meet a lowered vitality, so long as sensitiveness is still present. This may be partly judged by the local reaction, and I have seen a marked local reaction follow an injection of D_{16}1 c.c., polyvalent tuberculin, or 1/10,000,000,000th of a cubic centimetre. In cases of advanced disease with secondary infection these infinitesimal doses may be combined with the administration of an autogenous vaccine.

The types of temperature reaction.—The general reaction to tuberculin includes a group of symptoms referable to the toxic properties of this agent on the neuro-muscular systems. These symptoms are of major clinical importance since they are produced by a smaller dose than will cause a focal reaction. Of the whole group the temperature reaction is the key to successful treatment. None will deny that the failures of the early tuberculin era were due to ignoring temperature reactions. While that is generally admitted, the error continues of referring to reactions as if they



differed in degree but not in type. From a failure to differentiate between the types of temperature reaction, two rival schools of the reaction and the reactionless method have arisen. The absolutely incompatible theories, the contradictory published results, the general confusion of thought in the mind of the profession generally, require no recollection. The truth of the matter is that both schools are right. There are some reactions which all may disregard with impunity. There are others which no intelligent physician will dare to overlook. I also suggest that in these types of temperature we have an accurate and scientific indication as to dosage. (See chart.)

Before proceeding to describe these types it is postulated that a rise of temperature, even of half a degree Fahrenheit above the mean, occurring within 72 hours of an injection of tuberculin is to be regarded as a reaction. A rise of temperature reaching its maximum within 24 hours of an injection is an *immediate reaction*, and may occur four hours after the injection. A rise of temperature reaching its maximum within 48 hours of the injection is a *delayed reaction*. A rise of temperature reaching its maximum within 72 hours of the injection is a *progressive reaction*. Now, since all pyrexia must resolve either by crisis or by lysis, it is clear that there may be six types of reaction. This is confirmed by observation.

1. *An immediate reaction with a fall by crisis.*—This, the mildest form of reaction, is due to the tuberculin injected, which is followed by complete immunising response. From the point of dosage it is of least significance, since the dose may be later increased and no reaction occurs.

2. *An immediate reaction with a fall by lysis.*—Here, in addition to the immediate reaction to the tuberculin, there are secondary oscillations due to incomplete immunising response. At the next injection the dose should be reduced by one-fifth the amount—that is to say, from 0·5 c.c. to 0·4 c.c.

3. *A delayed reaction with a fall by crisis.*—In this there is delayed absorption of the tuberculin followed by complete immunising response. The same dose may be repeated at the next injection.

4. *A delayed reaction with a fall by lysis.*—Here there is not only delayed absorption of the tuberculin, but an incomplete immunising response. The amount next injected should be reduced to one-half of the previous injection—e.g., from 0·79 c.c. to 0·4 c.c.

5. *A progressive reaction with a fall by crisis.*—In this there is not only an immediate reaction, but increased toxæmia from a focal reaction, eventually overcome by immunisation. This is the type of most serious significance, and if not regarded it will be followed by a violent summation temperature or by a gradual and persistent pyrexia, due to prolonged focal reaction. The dose of tuberculin must be reduced to one-tenth at the next injection —from D_1 c.c. to D_1 c.c.

6. *A progressive reaction with a fall by lysis.*—Here a focal reaction is not overcome by immunisation. The disease is lit up in the pulmonary lesion, and may progress by secondary tuberculous bronchopneumonia, of which this temperature is typical. Tuberculin treatment must be stopped, as otherwise the patient will pass into a condition of chronic tuberculous cachexia. The example of this type illustrated in the temperature chart occurred in my practice before one had appreciated the significance of the fifth type as a warning.

In their order of severity these types of temperature reaction are as follows: *a*. Immediate reaction with a fall by crisis—increase dose. *b*. Delayed reaction with a fall by crisis—repeat dose. *c*. Immediate reaction with a fall by lysis—reduce dose by ¼. *d*. Delayed reaction with a fall by lysis—reduce dose by ½. *e*. Progressive reaction with a fall by crisis—reduce dose to 1/10. *f*. Progressive reaction with a fall by lysis—stop tuberculin.

Results of treatment.—The following are the immediate results of treating 131 patients, ambulant cases, with polyvalent tuberculin on these lines at the St. Marylebone Tuberculosis Dispensary. The record does not include patients who received prophylactic injections. The time of treatment varied from 3 to 25 months. I have used Philip's classification, and a division is made between those whose sputum contained tubercle bacilli and those in whose expectoration the tubercle bacillus was not found. The word "cure" is avoided, but the words "disease arrested" implies that the patient presents neither symptoms nor any signs of active disease.

—	T.B. −			T.B. +			
	L_1s	L_2s	L_3s	L_1s	L_2s	L_3s	L_4s
Dead	—	—	—	—	—	—	1
Worse	2	—	1	1	2	5	5
In statu quo	10	1	—	—	—	—	3
Improved	36	24	4	1	3	8	5
Disease arrested	6	6	5	—	1	1	—
Totals	54	31	10	2	6	14	14

Allsop-place, W.

TUBAL GESTATION CONTINUING TO THE SIXTH MONTH AFTER RUPTURE AT THE SIXTH WEEK.

BY ROBERT NAIRN, F.R.C.S. ENG., L.R.C.P. LOND.

THE following is an account of a condition which is perhaps sufficiently rare to deserve publication in THE LANCET.

The patient, who had been married for six years, had had no children. The cervix was long and narrow, with a small os; the os had been twice dilated. Menstruation had always been painful at first, but it was regular. When seen on Jan. 25th, 1912, the patient complained that after missing one period menstruation had now gone on for nearly three weeks. Her last period had been on Nov. 24th, 1911. On Jan. 7th, 1912, menstruation began with an unusual amount of pain, especially inside the right hip. There were numerous blood clots. This lasted for about three days; it then stopped, and she felt well till Jan. 11th. She then had violent pains which lasted until the following day, when there was free bleeding for about an hour. It was not pure blood that came away, being very pale, like blood mixed with water. On the 13th there was a little "blackish" blood passed, and since then there had been a constant discharge of brownish matter.

On examination the breasts were found to be rather full, and they were slightly painful. The uterus was tender and immovable, with thickening all round it, and a brownish purulent discharge from the os. The temperature was 100·4°F. A diagnosis of miscarriage with subacute parametritis was made. On Jan. 26th the patient was curetted and given hot douches frequently. The curette went in rather to the patient's left. The discharge almost stopped after this, and the temperature remained normal until Feb. 18th, when it rose to over 100°, and the discharge increased, though it was lighter in colour. Hot douching was continued for four weeks longer, after which the temperature remained normal and the discharge stopped entirely. There was still tenderness, with a feeling of thickening about the uterus. On March 21st the patient felt quite well. On examination there were still immobility and matting about the uterus, which had enlarged to the right of the middle line, and a uterine souffle was heard. The breasts had

distinctly enlarged. An amended diagnosis of either double pregnancy in a bicornuate uterus with miscarriage from the left cornu (normal or ruptured ectopic pregnancy) or fibroid of the uterus with miscarriage was now made. The uterus and breasts continued to enlarge through April and May, and the former was nearly up to the umbilicus.

Early in June I again examined the patient and found that the uterus had not continued to rise, and that the souffle was less distinct. Towards the end of June it was evident that the uterus had sunk. There was no souffle and the breasts were smaller.

When again examined on August 3rd a solid mass was felt per vaginam to the patient's right, but matting made it impossible to differentiate the parts. In view of the doubt as to the true condition a laparotomy was decided upon, and this I performed on August 8th, assisted by Dr. W. W. Moore and Dr. MacDonell. On examining the pelvis through the median incision the uterus and left ovary were found to be adherent to the left side. The right broad ligament was obliterated by a large fluctuating swelling in its substance, filling the pelvis; and the right ovary and extremity of the Fallopian tube were defined on the surface of this swelling. An incision parallel to the pelvic brim let out a great quantity of dark brown fluid, together with what appeared to be a five-months' fœtus with fair-sized placenta.

It was evident that a right tubal pregnancy had ruptured beneath the peritoneum at about the sixth week, and gestation had then progressed until about the sixth month, when it was stopped by want of sufficient blood supply. Convalescence was slow, but eventually the patient recovered perfectly.

Hastings, New Zealand.

THE DIAGNOSTIC VALUE OF ABDERHALDEN'S METHOD IN CARCINOMA.

BY R. ST. LEGER BROCKMAN, M.R.C.S. ENG., L.R.C.P. LOND.,
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Abderhalden, professor of physiology at Halle in Germany, in his work on ferments of the animal system has shown that the body has the power to protect itself against substances which are foreign to it if introduced by subcutaneous or intravenous methods. The injection of cane sugar and vegetable proteids will give the serum of a dog into whose system they are so introduced the power of breaking down these substances into less complex molecules—a faculty wanting in the serum of an animal not so injected.

After Veit had shown that syncytial cells were present in various parts of the body during pregnancy Abderhalden set to work to see if he could show that any attempt was made to defend the body against such invasion, especially as the toxæmias of pregnancy were being attributed to syncytiotoxins. In 1912 he published articles describing the means by which he and his pupils had been able to demonstrate in the blood of a pregnant woman the presence of a substance which has a proteolytic action on placental albumin. He also showed that such a substance is absent from the blood of males and non-pregnant women, and further that this ferment is specific, acting on placental tissue only. To do this he made use of two methods—the dialysation method used in the following cases, which will be described later, and the optical method. In this latter case 1 c.c. of a 10 per cent. solution of placental peptone and 2 c.c. of serum from the patient under question are placed in a small polarimeter tube, the initial degree of rotation of light being at once read off. The tube is now placed in an incubator at 37°C., the tube being removed occasionally and examined by means of a polariscope. Incubation was allowed to proceed up to 36 hours. Abderhalden found that the maximum change of rotation with serum from a case of pregnancy was as high as 0·2°, whilst that when any other serum was used never exceeded 0·03°. His experiments in the case of animals gave similar results. The practical value of such methods in the diagnosis of pregnancy has been testified to by Abderhalden, Veit, Schwarz, and other observers.

The object of the present paper is to show that a specific ferment is formed against carcinomatous tissue, and to demonstrate the possibility of the existence of such being made use of in the diagnosis of carcinoma. In all the following cases the dialysation method of Abderhalden has been used.

A piece of coagulated carcinoma tissue, the preparation of which is described later, is placed in a dialysing tube, made from a fish's swim-bladder. To this are added 1·5 c.c. of serum obtained from the patient whose diagnosis is in question. Outside the dialysing tube are 20 c.c. of sterile distilled water. Into a control tube are put 1·5 c.c. of serum alone, from the patient, with 20 c.c. of distilled water outside. The surface of serum and water in both cases is covered with a thin layer of toluol to exclude as far as possible all bacterial contamination. They are now incubated at a temperature of 37° C. for 12 to 24 hours. At the end of that time 10 c.c. of the diffusiate in each case are added to 0·2 c.c. of a 1 per cent. solution of a reagent known as ninhydrin. (Ninhydrin, or triketohydrindene hydrate, with a formula $C_6H_4\begin{matrix}CO\\CO\end{matrix}C(OH)_2$, gives a violet colour if heated with a solution containing minute traces of albumin, peptones, polypeptides, and amino-acids. It gives a reaction with all substances in which the amido group is in α position to carboxyl.) The solution is raised to the boiling point and maintained at that temperature for one minute. If at the end of that time no change takes place in either case the test is negative. If, however, in the case of the one containing carcinomatous tissue a violet colour results whilst the other remains colourless, then a positive result has been recorded. In many cases a brownish tint remains after boiling. This has no connexion with the unmistakable violet colouration of a positive result.

The coagulated cancer tissue was the same for all the following cases. It was obtained from a woman with a large spheroidal-celled carcinoma of the breast. As soon as the breast had been removed by a complete Halstead operation the carcinoma was carefully separated from fat and breast substance. It was then cut up into small pieces which were dropped bit by bit into a beaker of boiling distilled water to which a few drops of glacial acetic acid had previously been added. It was boiled thus for half an hour. The tissue was then washed carefully in distilled water for 12 hours. It was kept ready for use in cold storage in dis-water tilled with a layer of toluol on top. Before any was used it had been kept thus for three weeks. The water in which it had been standing was then tested with ninhydrin with a negative result, thus showing that all the albumin had been efficiently coagulated. It was then dialysed with water, saline, and healthy human serum severally. The diffusiate in all cases gave no reaction with ninhydrin. The presence of dialysable products, sufficient to nullify the test, in this cancer tissue was thus excluded. The dialysing tubes were then tested as regards their permeability to peptones and their impermeability to colloids. Those which fulfilled these conditions were then used for the tests—all others being rejected. In referring to certain pitfalls and sources of

error which await one in doing this test I will describe the method employed in collecting the serum in these cases.

In the first place the fingers must be absolutely excluded from any direct part in the test. A drop of ninhydrin on the skin, especially if at all moist, will leave a deep violet stain. The contamination of the outer side of a tube with a finger, prior to dialysis, is sufficient to give a positive reaction on testing the diffusiate with ninhydrin. A pair of sterile forceps was used in these cases to lift tubes and tissue.

A trace of saliva will equally well give a positive reaction. This means that the mouth ought not to be used for suction whilst using a pipette. I use a rubber bulb on the end of my pipettes, though probably a plug of cotton-wool in the end of the pipette is sufficient to prevent contamination in this way. Absolute asepsis must be observed. Air-borne organisms such as B. subtilis and B. mesentericus do not, so far as my experiments go to show, nullify the test in 48 hours, but S. pyogenes aureus and, to a lesser extent, S. epidermidis albus will, even in the presence of toluol, cause sufficient change in the serum with the subsequent passage through the dialyser of the breakdown products in 24 hours, thereby rendering the result of no value. This can be understood when the liquefying action of these organisms is remembered. The presence also of hæmoglobin in the serum renders that sample utterly useless for working the test.

In these cases the blood was taken with all the precautions adopted in doing a blood culture. It was collected by means of a syringe, transferred to a sterile tube, and centrifuged at once. The serum was then drawn off and used for the test without any delay. The serum ought to be clear and straw coloured. The opalescent serum obtained from a patient shortly after a heavy meal is not reliable, since it contains dialysable substances which give a positive result in the tube containing serum alone, so that the colour obtained in that with carcinoma tissue may also be due to the same cause.

In some cases at the beginning I put my blood into cold storage to allow the separation of serum to take place. The serum so treated gave negative results, whilst serum from the same patients if used fresh gave a strongly positive result. This ferment appears to be specific for cancer tissue. Serum giving a positive reaction with carcinoma tissue gave a negative one if placental tissue or egg albumin was used. It is specific for cancer tissue in general, but will work equally well in all varieties of carcinoma, as will be seen from the following list of cases. In the first place I did the test on 25 cases which were undoubtedly carcinoma, and then on 20 odd cases in which carcinoma could be excluded beyond reasonable doubt, and in two cases beyond all doubt, as they subsequently found their way to the post-mortem room. The test was positive in all 25 cases of carcinoma and negative in the controls. In one case, which section has proved to be a carcinoma of the larynx, a negative result was recorded, possibly because only 16 hours were given for incubation.

Twenty-five Cases of Carcinoma.

Position of growth.	Number of cases.	Confirmed by section.	Nature of growth.
Tongue	6	3	Squamous celled.
Breast	5	4	Spheroidal celled.
Stomach	3	1	Columnar celled.
Bowel	2	2	Squamous celled.
Cervix	3	1	,,
Rectum	2	1	Spheroidal celled.
Testis	1	1	—
Urethra	1	1	—
Gall-bladder	1	0	—
Larynx	1	0	—
Totals	25	14	

As can be seen from this list 14 were confirmed by section, the nature of the growth in these cases all being recorded. Of the other cases the tongues were inoperable with secondary glands, the remaining breast was a cancer *en cuirasse*. The stomach cases were proved by clinical signs, test meals, and laparotomy. The carcinomas of the cervix were inoperable, a laparotomy being performed in one case. The rectum, the gall-bladder with jaundice, and the larynx with secondary glands necessitating tracheotomy were clinically undoubted cases of carcinoma. In all these the test was positive.

To place against these are the controls which gave negative results. So far I have not had a patient without carcinoma who has given a positive result. The controls include healthy patients and those with fractures, septic hands, tertiary syphilitic and tuberculous ulceration. There are some other doubtful cases which have not yet been proved by operation, post mortem, or subsequent history.

In addition there are a few cases which I thought worthy of individual notice. For permission to publish these I am indebted to the various members of the clinical staff at St. Bartholomew's Hospital.

CASE 1.—A man, aged 66, was admitted under Mr. H. J. Waring complaining of stoppage of the bowels. He gave a history of increasing difficulty in getting his bowels open. The calibre of his motions had got decidedly smaller. There was no history of passage of blood or mucus. For five days he had passed neither fæces nor flatus. A colostomy was performed, an annular stricture of his pelvic colon being found. This was freely movable, and on subsequent resection proved to be a columnar-celled carcinoma. *Test positive.*

CASE 2.—A woman, aged 52, was admitted under Dr. Herbert Williamson, complaining of abdominal pain. On examination a tumour was felt rising out of the pelvis to the level of the umbilicus. Per vaginam the pelvis was occupied by a fixed mass which could not be differentiated from the abdominal swelling. There was marked œdema of one lower extremity. The patient was thin and anæmic. The diagnosis was made of ovarian cyst (? malignant). A laparotomy was performed and the swelling removed. A section showed it to be a papilliferous ovarian cyst in a degenerated condition, but with no evidence of malignancy. Subsequent to the operation the œdema of the leg has completely disappeared. *Test negative.*

CASE 3.—A man, aged 32, admitted under Mr. C. Gordon Watson with a swollen left testicle. He gave a history of enlargement of the left testicle for two years, with a rapid increase in size for two months previous to admission. A hydrocele on tapping yielded clear serous fluid. The swelling was painless and testicular sensation was lost. Wassermann was negative. The testis was removed and section showed it to be a carcinoma. This patient has been seen since and now has a local recurrence. *Test positive.*

CASE 4.—A woman, aged 34, was admitted under Mr. W. McAdam Eccles complaining of a swelling of the umbilicus. Beyond slight induration around the navel nothing could be felt. A piece removed for section showed the structure of a simple adenoma with no evidence of malignancy. A laparotomy revealed a large mass in the stomach with a secondary swelling on the deep surface of the umbilicus, which section showed to be a columnar-celled carcinoma. *Test positive.*

Conclusions.—There is here, I think, sufficient evidence to show that the blood of persons suffering from carcinoma contains a substance absent in the blood of all others, and that this substance has a proteolytic action on the carcinoma tissue only. There are also several factors which point to its being of the nature of a ferment. If the serum from a patient is left to get stale it becomes inactive, but the addition of a trace of fresh human serum will activate it again. The reaction takes place best at 37° C. At room temperature the reaction does not occur, whilst heating the serum to

55° C. for five minutes inactivates it beyond recall. If, then, as is maintained, this substance is of a protective nature it would be natural to expect to find it present in larger quantities in patients who were in good general health. The results of these tests point strongly to such being the case. I have noticed throughout the whole series that a patient with a growth of the tongue or of the breast who is in good general condition will give an intensity of colouration in 12 hours which a patient in a low state of health would fail to give in 24.

The case of carcinoma of the larynx which gave a negative result only brings this test into line with others. No pathological test known to us is infallible. It is obvious that for practical use such a test must give a reaction in the early stages of the disease. Two of the tongue cases were early localised ulcers, one intestinal growth was small and easily removable, whilst one breast case was an early scirrhus. All these gave a markedly positive reaction in 24 hours.

The facts set forth here do, I think, point to the test being of some practical advantage as an aid in the diagnosis of carcinoma, especially in such sites as the stomach and bowels, thereby allowing early surgical interference. These results have all been obtained working in the pathological laboratory of St. Bartholomew's Hospital, where the kind suggestions of Dr. Mervyn H. Gordon and Mr. Mackenzie Wallis have always been at hand.

(Since writing the above, corroborative results have been published by some German observers. Gambaroff has gone a step further and maintains the possibility of differentiating between sarcoma and carcinoma by this method.)

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St. Bartholomew's Hospital, E.C.

A NOTE ON FIVE CASES OF POROCEPHALIASIS IN MAN FROM SOUTHERN NIGERIA.

BY J. W. SCOTT MACFIE, M.A. CANTAB., M.B., CH.B. EDIN.;

AND

J. E. L. JOHNSTON, M.B., B.S. LOND., D.T.M. & H. CANTAB.

(*From the Medical Research Institute, Lagos.*)

UP to the time when Sambon published his important paper on Porocephaliasis in Man[1] apparently but few cases had been recorded. In a subsequent paper[2] the same author added to his list four other records. It has, however, been pointed out by Löhlein[3] that the infrequency of the occurrence of this condition which might be deduced from the small number of cases on record does not really exist. He records how Seiffert found porocephali in 7·8 per cent. of necropsies performed on coloured railway workers in the Cameroons, and how he himself, in a series of 118 post-mortem examinations on negroes, found 10 infected with these larvæ. Borden and Rodhain have recorded cases from the Congo also, so that it would appear that porocephaliasis is not very uncommon in the natives of West Africa.

The five cases briefly described below occurred in Southern Nigeria. The first occurred at Ibadan, a large native town situated about 120 miles north of Lagos, the second at Calabar, the third at Itu, and the fourth and fifth at Degama. We are indebted to Dr. J. D. Finlay for the interesting account of the first case, to Dr. J. Currie for the notes on the second, and to Dr. A. H. Wilson for the records of the remaining three.

CASE 1.—The patient was a native man, aged about 24, who was brought to the Ibadan Hospital on July 31st, 1913. He died immediately after his admission, and in consequence the history of his case is somewhat vague. He is said, however, to have been taken ill five days previously, and the symptoms observed were fever and vomiting. At the post-mortem examination, performed by Dr. Finlay, the body was found to be well nourished, rigor mortis was present, and the conjunctivæ were noticed to be deeply stained. All the organs and tissues were intensely jaundiced. Lungs: The right lung was normal; the left lung was contracted, and the pleural cavity was filled with venous blood and dark clot. Heart: The cardiac muscle was soft. No valvular lesion was present. Liver: The liver was greatly enlarged, bile-stained, and somewhat soft. On its surface, just below the peritoneal covering, were several porocephalus larvæ, and in the substance of the organ a few more were found. There were also some lying free on the under surface of the liver. The gall-bladder was filled with thick bile. On section the liver showed the condition known as "fatty nutmeg liver." Stomach: The stomach was contracted and thickened, and Dr. Finlay compared its appearance to that of an ox. Several round worms were present in the cavity. Duodenum: The duodenum was surrounded by a hard mass which blocked the common bile-duct. On microscopical examination this mass appeared to be of the nature of an adeno-carcinoma. Intestines: The small intestine appeared to be normal, but the ascending colon was adherent to the hard mass referred to above. Kidneys: The kidneys were enlarged and stained a dark green colour. The larvæ on examination proved to be those of porocephalus armillatus. Three individuals measured 18 mm., 16 mm., and 15 mm. in length, and comprised 21, 19, and 17 rings respectively. The rings in the middle of the body were 1 mm. apart, and stood out prominently. The breadth of all three was 3 mm. The cephalo-thorax appeared to be identical with that figured by Sambon for this species.

CASE 2.—The second case was that of an old Hausa woman who was found dead by the police at Calabar in September, 1913. Dr. Currie, who was called upon to make a necropsy, determined that death had been due to extensive and long-standing dysentery. In the course of his examination he found a single larva of porocephalus armillatus encysted in the edge of the liver. No more of the parasites were found in other situations.

CASE 3.—The patient, whose age was about 40, was a native of Southern Nigeria, and an inmate of Itu prison. He was a big, well-developed man, who did not appear to be seriously ill. Only a very indefinite account of his illness could be obtained. He first complained of being sick on August 5th, 1910, stating that he was constipated and had vague pains about the abdomen. At the same time he noticed that his legs began to swell. He was first seen by Dr. Wilson on August 11th, and was found to have œdema of his legs, scrotum, and abdominal walls. The abdomen was distended, and contained free fluid. There was no enlargement of the liver and spleen, the urine was normal, and the heart and lungs appeared to be healthy. He was not very weak, and could get about fairly well. The patient was removed to Ikot Ekpene. On August 15th, when he was next seen, there was an increase of the dropsy; dyspnœa was present, with a cough and frothy expectoration. On examination of the lungs moist crepitations were

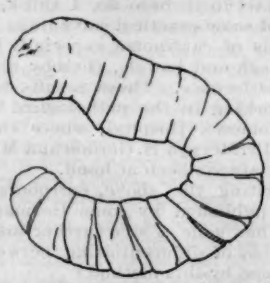
[1] Journal of Tropical Medicine and Hygiene, July 15th, 1910.
[2] Ibid., April 1st, 1913.
[3] Beiheft zu Archiv für Schiffs- und Tropen-Hygiene, 1912, vol. xvi., No. 9.

heard, and there was slight impairment of the resonance, especially on the right side. The patient died on August 18th. A post-mortem examination was made four hours after death. The body was well nourished. There was œdema of the legs and scrotum and slight general anasarca. On opening the abdomen a large amount of clear ascitic fluid escaped. There was no sign of peritonitis. The spleen was normal in size and appearance. The kidneys seemed to be a little congested. The liver was slightly enlarged, but in general appearance looked healthy. Scattered over its surface and in each lobe were what looked at first glance like cicatricial patches, but these proved on closer examination to be the encysted larvæ of porocephalus armillatus. Altogether there were 10 or 12 to be seen. They were all situated superficially, and were of a whitish colour. They were about half an inch long, closely coiled up, and surrounded by a thin membrane. Exactly similar larvæ were found in the lungs, but they were not so numerous as in the liver, and one of them lay an inch from the surface. The lungs were generally congested, and contained much frothy fluid. The bronchial tubes showed signs of congestion. There was no increase of fluid in the pleural cavities, a few slight adhesions were present, but there were no signs of recent pleurisy. The heart was normal. The pericardium contained an excess of fluid. The intestines were normal in appearance, and no larvæ were seen on their surfaces. The mesentery and the glands were not especially examined.

CASE 4.—The patient, a male native, aged about 50, was a prisoner from the Ahoada district of Southern Nigeria. In April, 1913, he was admitted to hospital at Degama for observation, but his symptoms appear to have been somewhat vague and indefinite, and in the same month he was transferred to Bonny. In August he was re-transferred to Degama. On re-admission it was noted that he was in "an emaciated and generally feeble condition," but no definite disease was diagnosed to account for his condition. His asthenia was progressive, and he could only walk feebly for a few yards at a time. He was discharged on Sept. 5th, but remained in the prison awaiting transport to his own country. About the same date it was observed that his abdomen was somewhat swollen, and on examination the presence of free fluid was detected. Two days later the feet and legs became œdematous, and asthenia became extreme. On the 11th dyspnœa and cough supervened, and the lungs were found to be congested. There was no fever and the urine was normal. Two days later the patient died. At the post-mortem examination, which was made by Dr. Wilson on the same day, the body was found to be emaciated and the legs slightly œdematous. Thorax: The heart appeared to be normal. There were a few old adhesions on both sides in the pleural cavities. Both lungs were much congested, and on the surfaces ecchymoses were found. On section a large amount of blood and frothy fluid escaped, the condition being one of general congestion and œdema. The lungs were searched for larvæ, but none was found. Abdomen: On opening the abdomen a large amount of limpid fluid escaped. There was no peritonitis. The liver was normal in colour and appeared to be below the usual size, and was tough in consistency. On its surface was a number of cicatricial patches. On further examination a nodule about ½ inch in diameter was found on the surface of the right lobe. This proved to be an encysted larva enclosed in a very tough and fibrous capsule. On thoroughly searching the liver four similar encysted larvæ were found. The mesentery was searched for larvæ, but with negative result. The spleen, kidneys, pancreas, and stomach and intestines were all normal.

CASE 5.—The patient, a Kroo boy, aged about 17 years, was admitted to Degama Hospital on July 7th with ulceration of the cornea of the right eye. He made no further complaint, and the examination of his physical condition was negative. He was, however, reported to have been losing strength recently and to have been performing his work in a languid fashion. Whilst in hospital his condition was one of gradual and progressive asthenia, and he died on July 14th. Two weeks before his death his gait became staggering, his knee reflex was lost, and he complained of some vague pains about the legs; but with the exception of rapid action of his heart no local signs or symptoms could be detected, and no evidence of cardiac incompetency was found. At the post-mortem examination the body was found to be fairly well nourished and presented no abnormal appearances. Thorax: The pericardium was adherent to the heart, the right ventricle thin and dilated, the left ventricle normal, and the valves normal. The lungs were very small but appeared to be healthy; no porocephalus larvæ were found although careful search was made for them. Old pleuritic adhesions were present on both sides. Abdomen: The abdominal cavity contained a little free peritoneal fluid, but there were no signs of peritonitis. The liver was slightly enlarged, there was general hepatitis, and the organ presented a nutmeg appearance. On the surface two patches with a superficial resemblance to cicatrices were found, which when cut into were seen to be encysted larvæ of porocephalus. On making successive sections through the liver about ten of these larvæ were found. None was more than a half to three-quarters of an inch beneath the surface. One larva was found in the mesentery. The kidneys, pancreas, stomach, and intestines were all normal.

The parasites from the last case had unfortunately been considerably damaged in dissection, and only one complete individual could be pieced together. This specimen (see figure) consisted of 20 rings, and



Porocephalus from Case 5, magnified. Actual length, 17 mm.

measured 17 mm. in length and 3 mm. in breadth. An unopened cyst from the same case measured 9 mm. by 6 mm. by 3 mm. The larvæ differed somewhat from those of the other cases. They were smaller, and the rings, which were broad and band-like, were set more closely together. The heads also appeared to be more bulbous. Such differences in appearance may have been due to the larvæ having been in an immature condition.

Very various opinions are held with regard to the effects of porocephalus larvæ on their human host. Löhlein seems to believe that they are harmless, but Chalmers states: "The presence of the parasite in the human body sets up inflammation of the lungs and peritoneum, but it does not appear to irritate the alimentary canal or liver."

In the first two cases recorded above sufficient evidence of disease was detected at the necropsies to account for death without attributing any action to the presence of the larvæ. In the second case only a single porocephalus larva was found in the body, but there was evidence of severe and chronic dysentery, and in the first death would appear to have been due to the presence of a tumour surrounding the duodenum and blocking the common bile duct, and the few symptoms noted, and the pathological appearances observed, were probably due to this cause. The possibility that irritation caused by wandering larvæ might have played some part in the production of the tumour should not, however, be forgotten, although no evidence of any such predisposing cause was detected at the necropsy. The three cases recorded by Dr. Wilson (Nos. 3, 4, and 5), on the other hand, suggest that the presence of porocephalus larvæ may have serious pathological

significance. No definite cause of death was discovered at the post-mortem examinations, and Dr. Wilson himself considered that the fatal termination in each case had at any rate been accelerated by the presence of the larvæ. These three cases presented a peculiar clinical picture, and the pathological conditions found after death were somewhat similar. The chief symptoms were progressive weakness, œdema, and dyspnœa, without any very definite signs to account for the physical conditions. The patient in Case 5 developed some interesting nervous symptoms shortly before death. A larva was found in the mesentery, a fact which suggests the possibility that wandering larvæ may have been responsible for some of the symptoms. It is interesting to note that Waldow found small cysts containing calcified porocephali in the liver, omentum, mesentery, and pleura of a native who died in the Cameroons with symptoms of meningitis.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE RESULT OF CEREBRAL DECOMPRESSION IN A CASE OF EPILEPSY.

BY ALLAN WATSON, M.B., CH.B., D.P.H., D.T.M. & HY. EDIN.

THE results of surgical treatment in cases of idiopathic epilepsy have been, on the whole, so discouraging that the following notes on a case which was markedly benefited by Kocher's decompression operation may be of interest.

The patient, a boy aged 16 years, was sent to the East Suffolk Hospital from the Ipswich Mental Hospital on Sept. 26th, 1912. He suffered from frequent epileptic fits, and was certified as being a person of unsound mind. He was an illegitimate child, and was born prematurely at about the end of the eighth month. At the time of his birth his father was 20 and his mother 19 years of age. When the patient was about 3 months old he suffered from severe "convulsions," but he was otherwise healthy until he was in his eleventh year. He is said to have had a fall on his head when about 5 years of age, but he was not unconscious after the accident, and was apparently none the worse for it. He commenced having epileptic fits when he was 10½ years old, and shortly afterwards some paresis of the right hand and arm was observed. The fits at first recurred about once every two days. When he was about 11 years old he injured his left eye and had to have it enucleated. Towards the end of November, 1911, the fits became much more severe and increased greatly in frequency, recurring 10 or 12 times a day. About this time also he began to show signs of insanity. He was admitted to the Ipswich Mental Hospital on Dec. 4th, 1911, showing the following signs of insanity, as stated on his certificate: "He talked of committing suicide and had asked for a rope and a razor to do so. He had fits of unprovoked laughter, and at times talked incoherently. He had no recollection of dates. He had occasional fits of violence and excitement." While he was an inmate of the Mental Hospital he had an average of about 10 fits daily.

Neither of the patient's parents suffered from epilepsy, insanity, alcoholism, syphilis, or tuberculosis. A maternal uncle suffered from general paralysis of the insane, and a paternal uncle suffered from melancholia. His father also had had a great-uncle who was insane for many years.

The patient was a fairly well-developed, intelligent-looking lad. His features were small and his forehead was narrow. His complexion was fair. There were no marks of injuries about the head, but the skull was distinctly flattened over the left parietal region. The following cranial measurements were noted: (1) Circumference taken just above level of superciliary ridges, 21¾ inches; (2) distance from nasion to inion across top of skull, 15 inches; (3) distance from right to left suprameatal points across top of skull, 12 inches. The colour of the right eye was blue. The pupil was of medium size and reacted sluggishly to light and accommodation. The knee-jerks were present and were fairly active. He seldom used his right hand and arm, which were less well developed than the left. The right elbow- and wrist-joints were usually held flexed, but he could extend both voluntarily. He answered questions promptly as a rule, but in a rather listless manner. His memory was fairly good for recent events, but not good for remote events. At times he was rather incoherent. He took very little interest in his surroundings. There was no evidence of congenital syphilis or of tuberculosis.

The patient was kept under observation for a week after his admission to hospital. He had daily from 12 to 15 fits of varying severity. There was never an aura of any description. Occasionally the fits commenced with a cry which was sometimes a yell, but more often a loud groan. The tonic spasm nearly always seemed to commence in both arms simultaneously; it usually, but not invariably, became general. The eye generally turned inwards and upwards, but sometimes outwards and upwards. The clonic spasm usually began on the right side of the body, but the muscles first affected varied; occasionally it began on the left side, and on a few occasions both sides seemed to be affected simultaneously. The clonic spasm usually became general. He was invariably unconscious during the fits for several seconds at least. Occasionally he was unconscious for a few minutes after a fit, but more generally he was conscious, though dazed and unable to speak for a little. He frequently passed urine or fæces involuntarily during or immediately after the fits.

An operation was performed on Oct. 4th, 1912. The patient was trephined over the left Rolandic area, and the opening was enlarged with gouge forceps until it measured about 3 by 2 inches. The dura mater was reflected, but no abnormality was noted save slight flattening of the cerebral convolutions. The brain surface was covered with Cargile membrane and the wound was closed in the usual manner. The patient remained unconscious for about 15 hours after the operation. When he recovered consciousness it was noticed that his right arm and leg were paralysed. On Oct. 7th he had one rather severe fit. The tonic spasm began in the right arm; the clonic spasm was general. Some hours later it was noted that he could move his right arm and leg voluntarily. By the 12th he had regained complete control over both limbs. He could use his right arm very much better than he could before the operation, and it was no longer held with the wrist- and elbow-joints flexed. His mental condition improved very rapidly and remarkably; he became bright and cheerful, and took an intelligent interest in everything. He had one very slight fit on the 23rd and another on the 24th. On

Nov. 5th he was discharged. He was apparently quite sane and the paresis of the right arm had completely disappeared.

A report on the patient received six months after the operation stated that he had had 12 slight fits since his discharge from hospital, but was quite sane and in excellent health.

I am indebted to Dr. Herbert H. Brown, honorary surgeon to the East Suffolk Hospital, for permission to publish the notes on the case.

Evanton, N.B.

TORSION OF THE PEDICLE OF AN OVARIAN CYST ON EACH SIDE,

WITH ADHESION OF AN INFLAMED APPENDIX VERMIFORMIS TO THE CYST ON THE LEFT SIDE.

BY CECIL MEREDYTH-JONES, M.B., B.S. LOND.,
HOUSE SURGEON AT WESTMINSTER HOSPITAL.

A WOMAN, aged 50, was admitted to Westminster Hospital on Dec. 30th, 1912, under the care of Mr. W. G. Spencer, complaining of violent pain in the abdomen most marked in the *right* iliac fossa and hypogastrium. She had noted the abdomen gradually enlarging for more than a year, and at times had felt "vague movements," but had not consulted a medical man. Her menstrual periods had become irregular for two years, but she had had some blood-stained discharges at intervals of from three to six months. She had first felt pain after a slight strain some two months before; pain had recurred at intervals, but was relieved by lying down. The acute attack of pain commenced on Dec. 27th, since when she had had no motion, and felt nausea but had not vomited.

On admission the patient was in distress with pain and great thirst. She had a dry, furred tongue, the pulse-rate was 130, and the temperature was 99·6° F. The abdomen was not markedly distended; there were no coils of intestines to be seen. A lobulated mass could be felt in the hypogastrium extending towards the *right* iliac region, which was tense and could be swayed a little, but it did not fluctuate; except over this the abdomen was resonant to percussion. Per rectum the pelvis could be felt to be occupied by a semi-fluctuating mass which pitted on pressure; the uterus was pushed forwards and downwards.

Mr. Spencer diagnosed an ovarian cyst with a twisted pedicle; the collection in the pelvis was supposed to be peritoneal fluid shut off from above by adhesions. A Pfannenstiel's incision—i.e., a curved incision through the skin and anterior sheath of the recti with a separation and retraction of the muscles—was made midway between the umbilicus and pubes. The bladder presented in the wound, for although it had been emptied it had been drawn up by the ovarian cyst, to which it had previously become adherent; also some intestinal adhesions were separated. Then a cyst of the size of a large cocoa-nut was found which had arisen from the *left* ovary, but its pedicle having undergone axial rotation the cyst had come to occupy the *right* of the hypogastrium and *right* iliac fossa, while the uterus had been rotated, so that its *left* cornu looked backwards and its *right* forwards. To this cyst the appendix was densely adherent, the appendix itself being excessively long, thickened, and kinked. It was removed and the stump buried in the cæcum. Then the cyst was brought out; it was blue from venous congestion but not yet gangrenous; its long pedicle had been twisted through about a circle, and its blood-vessels were thrombosed. On further examination after removal the cyst proved to be a multilocular ovarian cyst, some of the cysts containing putty-like remains of blood-clot. After drawing up the uterus and separating more adhesions the mass in the pelvis was found to be the remains of a right-sided multilocular ovarian cyst, the pedicle of which had become twisted, the cyst wall gangrenous and ruptured, but the contents had been confined to the pelvis by the adhesions above. After removing it the pelvis and rest of the lower part of the abdomen were sponged dry, a glass tube was passed into the pelvis, and the abdominal wall sutured in layers around it. The patient made an uninterrupted recovery and was able to leave for a convalescent home within a month.

The patient appears to have developed a multilocular cyst from each ovary about the size of a large cocoa-nut. During this time an exceedingly long appendix became kinked and inflamed, which led to adhesions to the cyst on the *left* side, to slow twisting of the pedicle, with the formation of adhesions to the bladder and intestines. The slow development of this condition, with the twisting of the fundus of the uterus, led to the cyst on the *right* side being crammed down into the pelvis, in the course of which its pedicle became twisted, the sac wall gangrenous, and rupture followed. It would appear that the acute symptoms were produced by the rupture of the *right* ovarian cyst in the pelvis. The complicated nature of the case had to be unravelled in the course of the operation.

I am indebted to Mr. Spencer for permission to publish the notes of the above case.

Westminster Hospital.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Pyelo-Radiography.

A MEETING of this section was held on Nov. 11th, Mr. G. H. MAKINS, the President, being in the chair.

A discussion took place on Mr. F. S. KIDD'S paper published in THE LANCET of Oct. 25th.

Mr. S. G. SCOTT spoke of the details of the radiographic examination in such cases. He said that the couch should be raised on wooden supports, as the usual couch used in radiography was not high enough. The surface should be of polished wood with a loose covering of thick felt, so that the patient could be slipped freely along it without muscular effort on his part. At the time of the examination he should be slipped to the foot of the couch, his legs raised and thighs supported. A suitable catheter was one which was divided into sections, opaque areas of one inch alternating with transparent areas of a quarter of an inch. After the collargol had been injected the patient should be put back into his original position, and the plate so arranged that the last rib occupied its centre. Each kidney should be skiagraphed separately. Compression from above aided the examination. The pelvis of the kidney should be kept full during the exposure, and the tube through which the collargol

ran should not be clamped, because this led to leakage round the catheter. The exposure occupied from 15–20 seconds, and then the collargol should immediately be run out. He did not think it advisable to watch the pelvis filling by the fluorescent screen. The whole process should last a few minutes only.

Mr. J. W. THOMSON WALKER said that the procedure required the cooperation of the surgeon with the radiographer. The patient should remain in bed for a day or two afterwards. It could not be denied that there was a certain element of danger, so that it should not be employed except in those cases where the information which it gave was important enough to justify its use. One class of case to which it was applicable was where hydronephrosis was diagnosed, and by pyelography none was seen. In this way an operation was avoided. In another class were cases where renal symptoms were present, but the kidney was not palpable. A third consisted of cases of renal tumour, and a fourth those in which radiography showed a shadow of doubtful origin, and in which by pyelography the relation of the calyces of the kidney to the shadow was made clear. One case had been described where the renal pelvis had been ruptured. It was not justifiable to use force in introducing the fluid, and the inflow should be stopped if pain was induced. This, however, was not always a reliable guide. No anæsthetic should be employed. If the fluid did not run in with a continuous flow another warning of danger was afforded. He had lately used solutions of from 10 to 15 per cent., or even 20 per cent., to ensure a good shadow. In one case he had found œdema of the fat around the kidney, which he ascribed to this method of examination.

Mr. A. RALPH THOMPSON said that he had found great assistance from pyelography in the planning of operations upon kidneys, especially when they were out of place, and also in determining the relation of the kidney to surrounding structures. He thought that a knowledge of X ray anatomy was important, and should if possible be standardised.

Mr. A. E. JOHNSON had found the method of use in cases of unilateral renal pain of unknown origin, in doubtful cases of hydronephrosis and pyonephrosis, in congenital defects of the urinary system, in abdominal tumours, and in the interpretation of X ray shadows. It was of great value in demonstrating early dilatation of the pelvis. He recommended that the tip of the catheter should be identified by the screen before running in collargol, and advised against compression from above. In his opinion the dorsal position was the best. In movable kidneys he had sometimes obtained advantage by examination of the patient in the standing posture.

Mr. KIDD replied.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Oct. 24th, Dr. LEONARD G. GUTHRIE, the President, being in the chair.

Dr. C. E. ZUNDEL showed two cases of Infantilism.

CASE 1.—The patient was a girl, aged 13 years, the eldest of three children, the others being healthy. She was very small at birth, and "does not seem to have grown since she was five years old." The patient was 3 ft. 6 in. in height, and her weight was 2 st. 10½ lb. The face was intelligent; the skin was dry; the hair was fair and rather coarse. There was no suggestion of appearance of puberty. Urine: Acid, pale, specific gravity 1004, contained 1/20 albumin, and a few granular and fatty casts were found in the centrifuged specimen. No polydipsia; occasional nocturnal enuresis.

CASE 2.—The patient was a boy aged 13 years. Since the age of 2½ years he had had polydipsia. No other illness before or since, but his excessive thirst had been constant. His father and one brother had also suffered from diabetes insipidus. Condition: Thin, childish, weight 2 st. 1⅛ lb., height 3 ft. 6 in.; thymus, thyroid, and pituitary gland apparently normal. Drank on the average 14 pints per diem. Disliked sweet things; appetite poor. Urine: Specific gravity 1001, no albumin, no casts, urea 0·5 per cent. Wassermann reaction negative.

Dr. E. A. COCKAYNE showed a case of Constriction of the Arm by Amniotic Bands.

The patient, a girl aged 3½ years, showed a narrow fibrous band completely encircling the right upper arm, causing slight constriction, and another which deeply constricted the forearm just above the wrist; in flexion—the intrauterine position—the two scars were at the same level. The scar tissue was adherent to the deeper structures and the bone felt grooved, but a skiagram showed that it was not involved. The right arm and hand were well developed and larger than the left, showing that there had been no pressure on the arteries.

Dr. COCKAYNE also showed a girl, aged 1 year and 4 months, with Hemiplegia and a very extensive Nævus.

The birth was easy, but the child was said to have been "born in convulsions." The mother attributed the condition to her having seen a cripple with a very large birthmark when she was three months pregnant. The mother noticed the nævus at birth, but was not sure whether the hemiplegia was present then or came on later. It was first noticed after the child had had a severe left-sided fit at the age of six weeks. She had had similar fits at intervals up to the age of one year. There was complete left hemiplegia with spasticity of the arm and leg, and the left side, including the face, was noticeably smaller than the right. There was very extensive port-wine staining of the skin of the scalp, face, arms, legs, and part of the trunk. It was fairly symmetrical and followed a posterior root distribution. Wassermann's reaction negative.

Dr. J. PORTER PARKINSON showed a boy, aged 5 years, with Rheumatoid Arthritis.

In July, on admission to hospital, the patient was pale and thin, with wasted muscles. The knees, ankles, wrists, and elbows were swollen and spindle-shaped, with soft, pulpy swelling. Enlarged glands could be felt in the axillæ and groins, but the spleen could not be felt and showed no evidence of enlargement. Teeth good; no evidence of gastro-intestinal derangement. Weight 2 st. 1 lb. Wassermann and von Pirquet's reactions normal. Temperature occasionally up to 100° F. Treatment consisted of massage, &c., a course of arsenic internally, and, later, rectal injections of polyvalent antistreptococcus serum, but without effect. The patient left the hospital at the end of July, and on readmission in October, in addition to the conditions described above, there were spindle-shaped enlargements of all the joints of the fingers and slightly of the metacarpophalangeal joints of both hands, and the left hip-joint had become fixed in partial flexion.

Dr. T. R. WHIPHAM showed three cases of Underdevelopment.

CASE 1.—A rickety boy, aged 2 years and 3 months, who was very undersized, being only 2 ft. high and weighing only 11 lb. The anterior fontanelle was open and the patient had only seven teeth.

CASE 2.—A boy, aged 8 years, of diminutive stature, but well proportioned and intellectually bright. Height 2 ft. 9 in.; weight 1 st. 8½ lb. No signs of rickets, but the patient suffered from tuberculosis of the skin and subcutaneous tissues. He had been treated with thyroid extract and more recently with polyglandin, with some improvement.

CASE 3.—A girl, aged 18 years, showing signs of hyperthyroidism. She had the development of a girl aged 10, her

height being 4 ft. 1½ in. and her weight 4 st. 10½ lb. There was an absence of mammary development, also of both pubic and axillary hair, and menstruation had not occurred. The girl had attended school, but was not quite up to the normal standard and her memory was not good.

Dr. WHIPHAM also showed a girl aged 6 years with Enlargement of the Liver and Spleen associated with Jaundice.

The patient was born jaundiced, the colour being "green-yellow," and the condition lasted for six weeks. Since then no jaundice had been noticed until February of this year. The onset was sudden, and when the patient was first seen in May she was deeply jaundiced, being of an olive-green colour all over. The liver was greatly enlarged, extending to the umbilicus, and the spleen was also of considerable size, extending down to the same level. The blood count at this time showed red corpuscles, 4,824,000 per c.mm.; white cells, 15,200 per c.mm.; polymorphonuclears, 39 per cent.; lymphocytes, small, 53 per cent.; lymphocytes, large, 6 per cent.; and eosinophiles, 2 per cent. No myelocytes or mast cells were seen. The motions were brown or yellow in colour, not acholic, but the urine was deeply coloured and contained bile-pigment. Wassermann reaction negative. After persisting for three months the jaundice had been gradually getting less during the last two months. The liver edge was now 1½ in. above the umbilicus, but the spleen had slightly increased in size. A recent count showed a change in the blood picture: Red corpuscles, 2,360,000 per c.mm.; white cells, 38,000 per c.mm.; polymorphonuclears, 50 per cent.; lymphocytes, small, 28 per cent.; lymphocytes, large, 4·7 per cent.; myelocytes, 13·3 per cent.; eosinophiles, 3·7 per cent.; and mast cells, 2·2 per cent. Nucleated red corpuscles were present and a few of the myelocytes contained eosinophile granules. Hydropic degeneration of the nucleus was frequent, especially in the myelocytes and the large lymphocytes. The urine was still pigmented and contained bilirubin, but no urobilin.

Dr. LEONARD GUTHRIE showed a case of Congenital Insufficiency of Ocular and Facial Movements in a boy aged 4 years.

At birth imperfect closure of the eyes was noticed and also that the face was devoid of expression. The whole face was motionless as far as the mouth; the skin of the face was smooth and not tightly stretched. The eyes could not be completely closed, the eyeballs were in mid-position, and the only ocular movement was convergence downwards and inwards. The pupils were equal and reacted to light, less so to accommodation. Laughter was only represented by guttural grunts. The orbicularis oris was not paralysed, this being probably due to association of its action with that of the tongue. Electrical reactions could not be obtained in any of the facial muscles except the orbicularis oris. The condition was regarded as an unusual form of myopathy affecting muscles supplied by the third and the seventh nerves.

Dr. F. LANGMEAD showed a case of Cretinism.

The appearance of the patient, a female child aged 5 months, was characteristic. The child was shown because she exhibited two features which are characteristic of Mongolian imbecility rather than of cretinism—(1) markedly incurved little fingers and (2) congenital morbus cordis.

Dr. E. BELLINGHAM SMITH showed a case of (?) Cerebellar Encephalitis.

The patient, a boy aged 8 years, was admitted as a case of cerebro-spinal meningitis. On July 25th there had been a sudden onset, with headache, vomiting, and aching pains. On admission on the 26th the boy was drowsy, with flushed face, rigidity of the neck muscles, and some retraction of the head. The abdomen was retracted, the reflexes were exaggerated, the plantar reflexes extensor, and Kernig's sign and ankle clonus were well marked. Temperature, 103° F. Lumbar puncture revealed a turbid fluid, not under pressure, containing 0·075 per cent. albumin; globulin a small precipitate, glucose present, also many polynuclear cells and large lymphocytes. No organisms seen; cultures sterile. On August 8th commencing optic neuritis was noticed which became more marked. On Sept. 4th fluid from a second lumbar puncture was also sterile. 9th: No paresis of the limbs but well-marked ataxia, the incoördination being equally present on both sides. 15th: The patient was put on iodide of potassium, since when symptoms have rapidly cleared up and the child seems now practically well.

Dr. BELLINGHAM SMITH also showed a case of Infantile Paralysis of early onset and with unusual deformities.

The disease came on when the child was only two months old. The patient was quite unable to sit up and usually lay with both knees flexed and the hips abducted so that the thighs were at right angles to the pelvis. The left leg could be readily brought down into a direct line with the trunk, but the right was incapable of complete inward rotation and adduction.

Dr. PORTER PARKINSON showed a specimen of Neoplasmoid of the Sigmoid Flexure from a boy aged 5 years.

When admitted to hospital on July 17th there was a distinct, rounded, movable, tender lump of the size of an orange in the right iliac fossa. On Sept. 29th, after several motions containing large quantities of blood, the child died. At the necropsy the lump was found to be a distended sigmoid colon lying in the right iliac fossa and adherent to the adjacent small intestine. The walls of the sigmoid were much thickened with hard, whitish growth, the inner surface being ulcerated. A microscopical section showed somewhat large, rounded, and tailed cells packed in the meshes of fibrous tissue alveoli.

In the opinion of Dr. Porter Parkinson and of others the growth was a carcinoma.

Dr. J. D. ROLLESTON showed a specimen of Extensive Diphtheria of Trachea and Bronchi from a girl aged 5 years.

The specimen showed membrane closely adherent to the posterior surface of the epiglottis and interior of the larynx, from the lower end of which a thick continuous tubular cast extended to the bifurcation of the trachea and passed into each of the bronchi.

Dr. F. G. CROOKSHANK showed a skiagram of a case of Anomalous Development.

The lower limbs were small, immobile, and presented webbing between the thigh and the calf. At the post-mortem examination it was found that the spinal column terminated at the twelfth dorsal vertebra in a bony mass of small size. The spinal canal was completely closed. There were 12 pairs of dorsal nerves, but no lumbar nerves at all, and the legs were seemingly not innervated. A very rudimentary sacrum and coccyx were present. For several months before and after the date of the child's conception the mother had been in close daily association with a little boy, paralysed as the result of Pott's disease, who died when the mother was four months pregnant.

Mr. DUNCAN C. LL. FITZWILLIAMS showed a specimen of Extrapleural Lipoma from a child aged 6 years.

The case had been shown at the meeting of the Section in January as a case of lymphangioma, resembling hernia of the lung. The swelling gradually became larger, and in September the lump was exposed and removed. It proved to be a pure lipoma with very little fibrous tissue. The portion in the neck communicated by a narrow isthmus growing down behind the subclavian artery with a much larger portion which lay within the thorax outside the parietal pleura. The tumour, which was very soft, was removed whole.

SECTION OF OPHTHALMOLOGY.

Exhibition of Cases.—The late Mr. E. Nettleship.—Disease in the Eyes of Animals.—Obstruction of the Lacrymal Duct and its Treatment.

A MEETING of this section was held on Nov. 5th, Sir ANDERSON CRITCHETT, the President, being in the chair.

Mr. SYDNEY STEPHENSON showed a case of Brawny Scleritis at an early stage, which Mr. E. TREACHER COLLINS thought was a tenonitis. He had had a

case of this condition which persisted for a long time, as had this one.—Mr. W. T. HOLMES SPICER reminded the meeting of a case with a similar appearance which he showed at a former meeting under the title "solid œdema of the conjunctiva." That, however, had a syphilitic origin, which apparently was not the case here.—Dr. D. LEIGHTON DAVIES spoke of a case under his care with a similar appearance. A small portion examined showed round cells without a stroma. He enucleated, and on bisecting the globe found a darkly pigmented sarcoma. He suggested that the present case was sarcoma.

Mr. J. L. BARLEY showed a case of Keratitis Punctata.

Mr. C. KILLICK exhibited a case of Persistent Hyaloid Artery.

Dr. A. S. COBBLEDICK showed an example of Ectasia of the Cornea four years after a perforating wound; also a case of Rupture of the Choroid in a Myope following Labour. The latter case he regarded as unique.

Mr. N. BISHOP HARMAN showed a patient with New Growth causing detachment.

Mr. GEORGE COATS exhibited a Dog with Keratitis.

Mr. E. CHATTERTON showed a case of Tuberculous Iritis in order to elicit opinions as to the value of tuberculin injections for the condition.—Mr. S. H. BROWNING said he had treated a number of such cases with tuberculin, and he knew of no case in which hæmorrhage had followed its use. The French believed the hæmorrhages which occurred were of tuberculous origin.—Mr. M. S. MAYOU stated that he had treated numerous cases of tuberculous iritis with tuberculin, and had not seen hæmorrhages during the treatment; there was absorption of the nodules, and subsidence of the iritis. It was the most successful treatment. He commenced with 1/10,000th, and worked up to 1/250th mgm. T.R. Where there was lung trouble also, a very small dose caused severe reaction, and it should be given very cautiously.—Mr. A. MACNAB said he had recently treated two cases in this way, and both did very well.—Mr. ARNOLD LAWSON gave confirmatory experience.

Mr. J. HERBERT PARSONS showed a Central Unilateral Retinitis.

Dr. A. HUGH THOMPSON exhibited a case of Choroiditis starting as a ring round the macula.

The PRESIDENT made sympathetic reference to the death of Mr. Edward Nettleship, which was a loss not only to the society but to the world of ophthalmology. Though evidently in failing health, his mental vigour was such that he took part in the discussions at the recent Congress of Medicine. The speaker's father and Mr. Bowman had the highest opinion of Mr. Nettleship's pathological knowledge in the early days, and that opinion had been amply justified since. A resolution of condolence with his relatives was carried by members upstanding.

Mr. G. COATS read a paper in which he reported some examples of Disease in the Animal Eye. He described a form of keratitis characterised by the presence of a superficial vascular opacity of the cornea. The disease was of long duration and had no evident association with distemper or other general illness. It sometimes occurred in more than one member of the same litter. Pathologically, it consisted in a replacement of the superficial layers of the cornea by a layer of inflammatory tissue. The human condition which it most nearly resembled was trachomatous pannus, but it differed from that disease in the absence of follicles, and of scarring or distortion of the lid, as well as by its not being confined to the upper part of the cornea. A case of retinal degeneration following distemper was described. The retinal changes were peculiar in that it was the bipolar cells of the inner nuclear layer which were chiefly affected, the ganglion cells showing only slight, and probably secondary, changes, the outer layers being mostly intact. In places, however, the rods and cones and their nuclei were also atrophied. These changes were probably to be explained by the presence of a circulating toxin with a specific affinity for the retinal bipolar cells, analogous to the specific action of nicotine on the ganglion cells. A description of some cases of choroido-retinal degeneration and inflammation was prefaced by a discussion of the pathological points of distinction between these two conditions. A profound atrophy of the retina without adhesion to the choroid must be a degeneration. In old-standing cases of degeneration, however, an adhesion between the two membranes occurred, but it was usually not very intimate; the line of demarcation remained well defined, and the elastic lamina of the choroid was intact. The occurrence of cicatricial tissue was certain proof of precedent inflammation, and where it was present the adhesion was dense and the layers of the choroid and retina were distorted and disorganised, instead of being merely atrophic. A degeneration was often fairly uniform over a considerable area; an inflammation was patchy. Examples of choroidal-retinal degeneration in a dog, racoon, wolf, wild sheep, ferret, wallaby, and hyæna were shown. The racoon appeared to be an albino, yet a little pigment was present in the epithelium of the ciliary body and anterior part of the choroid, showing that pure albinism could not be diagnosed without a microscopical examination. The racoon also showed nystagmus—a condition occasionally described in the lower animals. A case of choroiditis, cyclitis, and keratitis in a bear, and one of anterior choroiditis in a peccary were also illustrated. Two instances of canine irido-cyclitis were reported. The first was of plastic type, and was peculiar only in its occurrence in the dog, in which animal the condition appeared to be rare; the second, also in a dog, was characterised by an enormous thickening of the iris, due to infiltration with mononuclear cells of a special type. Posterior synechiæ and other features of plastic iritis were absent. The cause of the irido-cyclitis was obscure in both instances.—The paper was discussed by Mr. TREACHER COLLINS, Mr. J. B. LAWFORD, Mr. SEWELL (veterinary surgeon), Dr. RAYNER D. BATTEN, Mr. BISHOP HARMAN, Mr. HOLMES SPICER, Mr. W. LANG, Mr. R. R. CRUISE, and the PRESIDENT, and Mr. COATS replied.

Mr. CHARLES WRAY read a paper on Obstruction of the Lacrymal Duct and its Treatment. He believed it was a mistake to remove the sac when syringing failed without attempting to cure by means of styles, or styles and probing combined, and thought it was not unlikely that ectropion and its sequelæ might follow excision. Too much was heard of the satisfactory and immediate results, but too little of bad ones and of recurrences. After referring to the danger of adrenalin and chloroform when used at the same time, stress was laid on Harrison Butler's operation. According to the speaker, all cases of epiphora should be rhinoscoped, though he admitted he had received little or no help from the rhinologist. Mr. Wray treated

his cases in the following way. He injected cocaine by Mellen's method, and instilled a drop into the conjunctival sac. A Bowman's probe was then passed into the sac and the point pushed forward under the palpebral ligament. He then cut down on the guide, taking care to note the click of the knife on the probe. So far the procedure was quite painless. He then placed crystals of novocaine in the sac and had recourse to probing. At times, if the stricture was impermeable he forced a passage through the posterior wall of the duct. A piece of strapping was then placed just below the sac, so that the style did not press on the skin. A special style—gold-plated, and obtainable from Courlander, of Croydon—was then passed, and the latter was so constructed that when a piece of strapping was placed on its arms it could not move. Whilst it was *in situ* argyrol 5 per cent. was used three times a day, or such other application as might be desirable. Later, when a firm-edged fistula had formed, the patient was instructed to irrigate the sac three times a day, passing the style at night, and taking it out in the morning. To cure the fistula it could be dilated, and whilst stretched all the cicatricial tissue cut away, after which the edges of the wound were brought together and covered with collodion. He proceeded to criticise the operations of Toti, Eichen, and West. The first of these consisted in making a large open window between the sac and the nose, and as the nose in cases of lacrymal obstruction was so very often diseased the operation, in his judgment, could scarcely receive the approval of ophthalmic surgeons. And the patient experienced considerable annoyance on blowing his nose, and the operation provided no vertical tube like the duct to carry a flow of tears opposed to the entry of organisms to the sac. Eichen side-tracked the tears to the antrum —i.e., converted this cavity into a pool of stagnant tears. It also had the same objections as those urged against Toti's operation. West's operation was for obstruction low down in the duct, and consisted in removing its nasal wall. It was better than the two foregoing operations, as some of the duct was left, but it had the serious objection that autolavage and autoprobing were impossible. The aim of the operation was to make a permanent fistula in the middle meatus, but the task of making one in erectile or semi-erectile tissue in a canal the size of a crow-quill was almost impossible; but in the event of the duct being kept open by constant probing *vid* the nose, or canaliculus, the erectile tissue would be so damaged that a fibroid stricture would be bound to follow. Mr. Wray said that his object was not so much to attract attention to his own operation as to obtain a formal expression of opinion as to the value of the newer operations of Toti, West, and Eichen.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Vital Principles of Foodstuffs.—Paratyphoid Fever.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Nov. 7th, Dr. T. WARDROP GRIFFITH, the President, presiding.

Dr. J. GORDON SHARP read a short paper on the Vital Principles of Foodstuffs, with special reference to their employment in treatment. He said that he thought there might be something in Funk's statement that he had discovered a pyrimidine-like body which was related to thymine. This body was named "vitamine." Dr. Sharp believed in unboiled milk for children exclusively fed on that fluid, and he warned against the use of all dried milks, and, indeed, against all dried and tinned preparations. He also said it was necessary to guard against the use of foods which had been chilled or frozen for long periods. As remedies, he said, lecithins, glycerophosphates, and the nucleins were of little avail in the treatment of malnutrition, but he said that the crude foodstuffs, such as a mixture of eggs, fat, bone-marrow, and malt extract, did good. He had also great faith in cod-liver oil, and used it in combination with egg (both yolks and whites), and found it useful in all kinds of wasting. Fats had an important action in preventing and curing scurvy, scurvy rickets, and marasmus.—The paper was discussed by Dr. T. CHURTON and Mr. F. H. MAYO.

Mr. A. E. LITTLE read notes on a case of Paratyphoid Fever. The patient, a man aged 38, had a rise of temperature every evening for about two weeks before it reached 104° F., when rose-coloured spots appeared. Widal test for typhoid was negative, but positive for paratyphoid. The case was notified as continued fever on account of the character of the temperature, which came down gradually for four weeks before reaching normal, when there was a relapse, with a rise of temperature for a few days. There were nausea and vomiting occasionally in the early stage of the illness; no diarrhœa; duration of rose-coloured spots was shorter than typhoid. The diagnosis of paratyphoid fever must be made by the agglutination reaction.

The PRESIDENT showed Drawings of the Heart from a case of Patent Ductus Arteriosus.

Mr. R. LAWFORD KNAGGS showed a case of Intractable Vesico-vaginal Fistula following Parturition, in which the left ureter was implanted into the rectum by a sacral operation and the right kidney subsequently removed four and a half years ago. The patient had remained well, but returned to hospital recently suffering from prolapse of the upper and anterior walls of the bladder through the vesico-vaginal opening.

Mr. J. A. COUPLAND showed a specimen of Tuberculous Stricture of the Ileo-cæcal Valve which had produced acute intestinal obstruction. The case was treated by excision of the cæcum, ascending colon, and a portion of the ileum, followed by an end-to-end anastomosis, with a satisfactory result.

Mr. COUPLAND also showed a specimen of a Cystic Appendix which had become adherent to the sigmoid flexure and had given rise to strangulation of a loop of small intestine.

Mr. J. F. DOBSON showed a case of Ankylosis of both Hip-joints in the Flexed Position, following acute suppurative arthritis. A subtrochanteric osteotomy was performed on the left side; on the right side arthroplasty was performed on the lines laid down by Dr. Murphy, with an extremely satisfactory result.

Mr. ALEX. D. SHARP showed a case of Pharyngeal Tuberculosis in a woman aged 34, confined chiefly to the right half the pharynx. There was no clinical evidence of pulmonary phthisis, and only during the last few weeks the upper boundary of the larynx had become involved. Agonising pain on swallowing was relieved by local application of pure lactic acid every third day.

Cases were also shown by Mr. H. COLLINSON, Dr. W. GOUGH, Dr. CHURTON, and Mr. G. CONSTABLE HAYES.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Pathology and Treatment of Dropsy in Relation to Colloids.

A MEETING of this section was held on Oct. 31st, Dr. J. O'CARROLL, the President, being in the chair.

Dr. WALTER G. SMITH read a paper upon the Pathology and Treatment of Dropsy in Relation to Colloids, in which he developed some recent views upon the causation and pathology of œdema and dropsical effusions. The chief factors of œdema were these: 1. Vascular—i.e., blood-vessels and lymph-vessels. (*a*) Increased supply or inflow of transudate. (*b*) Obstructed or diminished outflow through (i.) lymphatics; and (ii.) veins and capillaries. 2. Osmotic pressure. 3. Physico-chemical alterations in the blood. 4. Alterations in cell nutrition: (*a*) Blood-vessels and lymph-vessels; (*b*) tissue cells; and (*c*) nervous influences. 5. Turgescence of cells. Special emphasis was laid upon the condition of watery turgescence of cells, and illustrative experiments were shown in favour of the hypothesis of Martin H. Fischer (Cincinnati) that even a very slight degree of, or increase in, acidity leads to turgor of cells. Renal and cardiac dropsy were respectively discussed, mainly from the colloid chemical point of view, and the bearings of this idea upon treatment were pointed out.

The PRESIDENT remarked that the paper was a most valuable one, and rare in the history of the Academy. Referring to the possibility of œdema occurring without any discoverable fault of the kidneys or heart, he directed attention to a form of acute moderate dropsy met with in alcoholic cases without any sign of renal difficulty when examined by ordinary methods. This condition was found to clear up rapidly after a few days' rest. The rarity of œdema in cases of mitral stenosis, and its frequent occurrence in connexion with mitral regurgitation, was a matter of interest. With regard to the evil effect of saline purgatives in Bright's disease, it struck him that possibly it might be that the normal tendency of the kidney to get dropsical itself may be increased by the absorption of the common salt—sulphate of magnesium—which was so often administered in cases of dropsy. He was also struck by the evil effect of normal saline injections in inflammatory conditions, especially in acute pneumonia.

Professor W. H. THOMPSON inquired if all œdema included in the definition meant accumulation of fluid in the tissue spaces. He pointed out that tissue fluid was different from the fluid present in the lymph channels. The inhibition idea was not, he thought, brought home so closely to the circumstances as one would like, and it must be admitted that there were other factors which were potent in causing œdema. Alteration in capillary pressure certainly produced no influence on increase of fluid in tissues, except in the case of the liver. He considered that alteration in the capillary pressure without alteration in the cell walls had no influence in the production of œdema.

Dr. A. R. PARSONS, Dr. W. M. CROFTON, and Dr. H. T. BEWLEY also spoke.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 7th, Dr. David Ross, the President, being in the chair.—Dr. W. Langdon Brown read a paper on Recent Work on Glycosuria. A case was shown to illustrate the recently described type of renal glycosuria which approached the conditions produced experimentally by phloridzin poisoning—i.e., an undue permeability of the kidney to sugar, while the blood contained less sugar than normal. Apart from the glycosuria the patient showed no symptoms whatever and was increasing in weight. The importance of the internal secretion of the pancreas in carbohydrate metabolism had recently been emphasised by the observation that in the depancreatised dog the heart lost its normal power of utilising sugar. The difficulty of associating the pancreas with the glycosuria in some cases was due to the fact that the pancreatic lesion might not be in an active stage at the time the glycosuria was noted, and examples were given of this. Again, the pancreatic defect might not be absolute, but merely relative, owing to overaction of some antagonistic ductless gland, such as the suprarenal, thyroid, or pituitary. Loewi's adrenalin eye test for pancreatic insufficiency was based on this antagonism, and might enable us to determine whether a given case of glycosuria was due to the pancreas. Organic disease of the suprarenals did not cause glycosuria because it was accompanied by a deficiency of adrenalin, but the use of adrenalin in asthma might produce glycosuria, and the suggestion was made that some cases of high blood pressure with glycosuria in later life might be due to overaction of the suprarenals. Overaction of the thyroid, as in Graves's disease, was frequently accompanied by glycosuria, or at any rate by lowered tolerance for sugar, and the medicinal administration of thyroid extract would not infrequently excite glycosuria. With overaction of the pituitary body such as occurs in the early stages of acromegaly glycosuria was often present, while in the later stages when the posterior lobe of the gland had been destroyed there was a raised tolerance for sugar. A case of arrested acromegaly was shown in support of this, a woman who could consume 256 grammes of dextrose at one time without excreting any. After experimental ablation of the gland subsequent removal of the pancreas would no longer excite glycosuria. Puncture of the fourth ventricle excited glycosuria through irritation of the suprarenal and pituitary body. The clinical equivalent of this was seen in the glycosuria of cerebral hæmorrhage, tumours of the brain, and concussion. In an unconscious person the discovery of glycosuria was no evidence of diabetic coma, unless there was diacetic acid present as well. The conception of glycosuria which held the field to-day was a loss of balance between the internal secretions. In treatment the aim was not simply to find a carbohydrate-free diet, for diabetics could often metabolise some form of carbohydrate, such as potatoes, oatmeal or lævulose, while meat proteins might excite glycosuria mainly by their stimulating effect upon metabolism. Cooked eggs and vegetable proteins did not have this effect. Wheat flour was not well borne, and the greatest difficulty was to find a satisfactory substitute for bread. Pure gluten bread was nearly always badly borne, and it was better to allow a small amount of some ordinary bread or of a gluten bread containing sufficient starch to be palatable. The citrates replace carbohydrates to some extent, as may alcohol, as whisky, 1 oz. per diem. To check the onset of acidosis alkalies should be given, but not of one metal alone, or those not given may be drained from the patient. A mixture of sodium bicarbonate, potassium citrate, calcium lactate, and magnesium carbonate was advised to be given, in

dose and frequency in proportion to the condition of the patient. When any increased restrictions of diet were imposed alkalies should be given to protect the patient. In impending coma the bowel should be washed out and 4 per cent. of sodium bicarbonate with 3 per cent. lævulose in a litre of water administered by drop enema.—A general discussion followed.

BRITISH OTO-LARYNGOLOGICAL SOCIETY.—A meeting of this society was held on Oct. 29th, Dr. J. Walton Browne (Belfast) being in the chair.—Mr. C. A. Adair Dighton (Liverpool) read a paper on Some Interesting Cases Treated in a Provincial Clinic. The cases he reported were of cavernous sinus thrombosis, latent cerebellar abscess lighted up by the mastoid operation, osteochondroma of the auricle, labyrinthitis and meningitis following polyp extraction, and symptomless lateral sinus thrombosis.—The paper was discussed by Mr. Charles J. Heath, Dr. Walton Browne, Dr. F. Spicer, Dr. J. Coubro Potter, and Dr. J. Walker Wood.—A paper by Dr. H. D. McCulloch on the Therapeutics of Radio-active Agencies in Disease, with special reference to the Cure of Chronic Nerve Deafness and Deaf-Mutism, which had previously been circulated among the Fellows, was discussed. Dr. McCulloch affirmed priority in the discovery in 1908 of this method of otological treatment, and submitted reasons why the hitherto employed medicinal and mechanical means had failed to remove the underlying cause. He deprecated inflation of the tubes in chronic catarrhal states until resolution had been effected *in situ* by radio-active agencies judiciously employed. Incidentally, he drew attention to the important immunising effect in subacute infections, referring to his previous contributions on that subject and to the amount of corroborative evidence that had since accumulated abroad. He exhibited and described various minute apparatus in the application of radio-active agents, mentioned his gratifying experience in a typical case of Ménière's vertigo, and drew attention to the promise of success this method held out in preventing deaf-mutism, the notes of one case being given. The paper was concluded by a tabulated list of 64 cases of hopeless deafness treated by him in 1911.—Dr. Walton Browne drew attention to a case of oto-sclerosis, reported at the recent International Otological Congress, markedly benefited by radium. In this case the improvement had been maintained.—Mr. Heath congratulated Dr. McCulloch on his interesting and scientific paper.—Dr. Potter required further information as to the selective action of the rays.—Mr. Dighton discussed the paper entirely from the aural point of view, strongly objecting to the statement that this treatment promised success in the prevention of deaf-mutism, as this "was not only misleading, but on the fact of things impossible."—Mr. B. G. Pullin, Dr. Spicer, and Dr. Wood joined in the discussion, the last-named stating that he had seen four of Dr. McCulloch's cases and tested them before and after three months' treatment, and though the hearing had not much improved there was an improvement.—Dr. McCulloch replied.—Mr. Charles Heath gave a demonstration of the Usual Methods of Drainage of Suppurating Ears. He said that a persistent discharge from an ear is uniformly accompanied by disease in the mastoid antrum, no matter whether the discharge escapes through the tense or through Shrapnell's portion of the drumhead. He pointed out (and illustrated his statement by moist specimens, diagrams, and patients) that when discharge escapes through a perforation in Shrapnell's membrane the change of route is due to the fact that the channel leading down to the tympanum, inside the incus, is obstructed by swelling of the mucosa of the inner attic wall, and that if the parts outside the incus (including Prussac's space and Shrapnell's membrane) were not unduly weak and capable of being perforated by the pressure of the pus that complete obstruction and acute mastoiditis would result. He exhibited diagrams of swollen mucous membrane obstructing drainage through the Eustachian tube, the tympanum, the attic, and the aditus, and described the symptoms they each produced. Mr. Heath stated that he had treated a considerable number of cases with perforation in Shrapnell's membrane, and while upon the operating table they all proved to be cases of mastoid disease draining on the outer side of the incus instead of (as usual) inside it; pathologically they were, therefore, not cases of attic disease at all. He asserted that it is only when discharge from the antrum descends inside the incus that it is able to reach the tympanic cavity and escape thence in the usual way through a perforation in the membrana tensa. Mr. Heath referred the Fellows to his article in THE LANCET of April 27th, 1907, where he recorded other cases of this kind which were afterwards exhibited before the British Laryngological and Otological Society.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The autumn meeting of the Northern and Midland Division of this society was held by the courtesy and at the kind invitation of the visiting committee at the Borough Mental Hospital, Leicester, on Oct. 23rd. Dr. J. F. Dixon presided.—Dr. T. Arnold Johnston read a very interesting paper on the Position of Pathology in Mental Hospitals. He referred to the difference in psychological ideas to-day as compared with formerly. He dealt with the relation of the medical superintendent and the medical officers to laboratory and research work, and to the ordinary routine duties of an asylum. He considered that the "incubus of routine" stifled ambition, and thought the medical officer needed encouragement and training to obtain his help in laboratory work, and that the pathological department ought to cover both ordinary sick-room work as well as special mental hospital conditions. There was need of a system of educating and interesting the medical officer; of a series of centres for the higher technical forms of laboratory work; and of an interchange and collating of proved research facts and their application to treatment. Altogether the paper brought forward many interesting and important points.—Remarks followed by Dr. J. F. Dixon, Mr. H. J. Blakesley, Dr. B. Pierce, Dr. C. A. Bryan, and others.—In the absence of Dr. H. D. MacPhail his paper on Some Observations on the Cerebro-spinal Fluid was read by Dr. C. H. G. Lyall. He dealt with the results of an estimation of the amount of albumin in the fluid from a series of cases of various forms of mental disorder. He used 5·5 c.c. of the fluid diluted with an equal quantity of water, the fluid being obtained by lumbar puncture. The amount of albumin present was found to vary within wide limits, the lowest being 0·03 per cent. and the highest 0·3 per cent. General paralysis always showed an increase. He considered the test of value in all classes of mental diseases and had found that the greater the amount

present the more serious is the prognosis of the case.—The meeting terminated with hearty votes of thanks to Dr. MacPhail for his paper, to the visiting committee of the hospital, and to Dr. Dixon for their kindly welcome and hospitality.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 5th, Mr. R. G. Hogarth, the President, being in the chair. The subject of Mr. Hogarth's presidential address was Some Nottingham Doctors. One of the most famous of all Nottingham doctors was, he said, John Arden, who practised at Newark from 1349 to 1370, and eventually became the King's surgeon. He was renowned for his cure of fistula in ano. In the sixteenth century Dr. John Jones, of Aspley Hall, was one of the first to draw attention to the value of the baths at Buxton. Dr. Robert Thoroton and Dr. Charles Deering were more renowned as historians than as doctors. Nottingham boasted of another physician appointed to Royalty in Dr. Taylor, who was physician to George II. The foundation-stone of the General Hospital was laid by John Smelley in 1781, and the hospital was opened in 1782 with 44 beds. The address was illustrated by numerous anecdotes and prescriptions of various past doctors.

Reviews and Notices of Books.

A Manual of Surgical Treatment.

By Sir WATSON CHEYNE, Bart., C.B., D.Sc., LL.D., F.R.C.S. Eng., F.R.S., and F. F. BURGHARD, M.S. Lond., F.R.C.S. Eng. New edition, entirely revised, and largely rewritten with the assistance of T. P. LEGG, M.S. Lond., F.R.C.S. Eng., and ARTHUR EDMUNDS, M.S. Lond., F.R.C.S. Eng. In five volumes. Vol. IV.: *The Treatment of the Surgical Affections of the Jaws, Tongue, and Alimentary Canal.* London, New York, Bombay, and Calcutta: Longmans, Green, and Co. 1913. Pp. 622. Price 21*s.* net.

THE fourth volume of this admirable work maintains the high character of the previous volumes; it has been thoroughly revised, so that it is representative of present-day practice. It contains an account of the surgery of the jaws and of the tongue, and also of the whole of the alimentary canal.

In the description of the treatment of any morbid condition the authors mention briefly the various methods which have been performed for its relief, but they describe fully only one or two of the methods—namely, those which they consider to be of real value, not hesitating to condemn methods of which they do not approve; and though exception might be taken here and there to the strictures which they pass on these latter procedures, on the whole the course adopted is wise, for it represents truly the advice they give as to treatment. Every surgeon will prefer that method of operation which he habitually practises, and he will obtain better results with it than with a method which he seldom employs, and so it will happen that he will consider his own method the better operation. For instance, in the account of the operation for piles the authors, while praising the operation of the clamp and cautery, speak slightingly of the method of ligature, but any surgeon who has much employed the ligature method knows that its results cannot be surpassed when the operation has been performed by one thoroughly conversant with it. We are not disputing the opinion of the authors that the clamp and cautery method is good, for it is an excellent one, and is especially associated with King's College Hospital, whence this work emanates; but we maintain that the ligature method is also capable of giving perfect results. This work, however, is intended to be the expression of the views of its authors, and those who follow the advice laid down in this book will not go wrong.

In the chapter dealing with inflammatory affections of the rectum we are told that stenosing proctitis is usually due to syphilis; this was at one time generally held, and many hold it still, but there is a good deal of evidence that many cases, probably the majority, are not syphilitic, and in most cases antisyphilitic treatment is absolutely useless. The description of enucleation of the tonsil represents it as a more serious operation than it is generally held to be at present, for many surgeons prefer it to tonsillotomy.

It is only here and there in this large volume that we may reasonably complain that the advice given is not sufficiently definite. For instance, in the account of the treatment of tonsillitis the reader is told, *inter alia*: "Some surgeons used to place great faith in the administration of tincture of aconite given in minim doses, repeated every hour for four or five doses until the pulse-rate approached the normal." But there is not a word of advice as to whether the reader should follow the practice of some old surgeons or not; the phrase, "used to place great faith," suggests that this method of treatment is not used now; if this is so, why is it mentioned at all? Shall the reader adopt this treatment or not? Surely it would be wiser either to say nothing about it or to advise its adoption.

The illustrations are numerous and good.

Diseases of the Liver, Gall-bladder, and Bile-ducts.

By HUMPHRY DAVY ROLLESTON, M.A., M.D. Cantab., F.R.C.P. Lond., Senior Physician to St. George's Hospital; Formerly Fellow of St. John's College, Cambridge. Second edition, illustrated. London: Macmillan and Co. Pp. 811. Price 25*s.* net.

ON its first appearance Dr. Rolleston's book at once established itself as an authoritative work of reference upon diseases of the liver, gall-bladder, and bile-ducts; indeed, it was generally recognised as the most important work upon these subjects in English. The second edition appears in slightly different form and it is issued by a different publisher. It has been revised and brought thoroughly up to date, so that it will worthily maintain the reputation achieved by its predecessor. Each morbid condition is described exhaustively, and special attention is devoted to pathological anatomy and histology, which are illustrated by clear and useful plates, drawings, and microphotographs. A special feature of the book is the clear and scientific manner in which Dr. Rolleston discusses the etiology and pathology of each condition, and where these matters are in dispute he always presents rival explanations or theories with admirable lucidity and gives his own conclusions or opinions critically and logically worked out. Authorities are plentifully quoted on almost every page and in each instance a full reference is given in a footnote. Statistics, either personal or collected from various sources, are frequently referred to, and in many instances brief records of illustrative cases printed in smaller type are given.

In a book of this size it is impossible to review

the individual subjects treated of adequately within the space available. We can only refer to some of the conditions described and discussed. Dr. Rolleston alludes to the conception of functional disease of the liver, and points out that while the symptoms formerly ascribed to functional inefficiency of the liver are now capable of explanation by other conditions, such as indigestion, constipation, or auto-intoxication, yet it is probable that this condition may be responsible for many symptoms in view of the complex and many-sided activities of the liver. At the same time, in the present state of our knowledge, its existence is difficult to establish. The condition described by Pick as pericarditic pseudo-cirrhosis of the liver is carefully discussed, and is regarded for all practical purposes as an extreme grade of chronic venous engorgement of the liver in cardiac patients with adherent pericardium.

The difficult subject of the various cirrhoses of the liver is dealt with in an admirable manner, and the account and classification of these conditions are the best with which we are acquainted. After a general discussion of the various classifications proposed, Dr. Rolleston adopts for clinical purposes a broad division into two types—viz., ordinary, or portal, cirrhosis, with a rare sub-variety, pigmentary cirrhosis, and biliary cirrhosis, which is subdivided into hypertrophic biliary cirrhosis and obstructive biliary cirrhosis. The descriptions and discussion of the cirrhoses extend to over 160 pages, and include full accounts of the symptoms, complications, and accidents incidental to these diseases. In connexion with portal cirrhosis it is, as the author remarks, somewhat surprising to find from statistics that hæmatemesis occurs less frequently than jaundice, and that it is recorded in only about one-fourth of all patients dying with a cirrhotic liver. In regard to hypertrophic biliary cirrhosis he gives in his adhesion to the French school, who regard this condition as different clinically and pathologically from portal cirrhosis. He points out that it is distinctly rare, and he believes that cases of ordinary cirrhosis with large livers but without persistent jaundice are frequently mistaken for it. The existence of an obstructive biliary jaundice is carefully discussed in the light of experimental and pathological observations, and the origin of the fibrosis is fully considered. It would appear that there is very little evidence that biliary obstruction *per se* causes cirrhosis. The description of primary malignant growths of the liver is interesting, and a useful classification is given. The condition to which the name of cancer with cirrhosis was formerly applied is critically discussed, and Dr. Rolleston accepts the view formulated by Turnbull and Worthington, that the cirrhosis is the primary change and that a compensatory hyperplasia of liver cells occurs which eventually becomes excessive and atypical and thus develops into carcinoma. He therefore suggests that it should be called primary carcinoma supervening in a cirrhotic liver or cirrhosis maligna or carcinomatosa. The varieties of jaundice and the relation of this symptom to the diseases with which it is associated are fully discussed, and all the newer work upon these questions is incorporated.

Diseases of the gall-bladder and bile ducts are dealt with in the same critical and exhaustive manner as the diseases of the liver itself. The concluding section of the book is devoted to the subject of cholelithiasis. The etiology of this condition is carefully considered, and the varieties of gall-stones, their mode of production, and the symptoms and complications are all fully dealt with.

Dr. Rolleston's book is an admirable work of reference in every sense. It presents all the information obtainable from a very wide experience and an encyclopædic acquaintance with the literature of the subject in a practical, interesting, and readily available manner. In every instance the question of treatment is set forth in full detail, and where alternative methods are available their relative advantages are indicated. We feel confident that it will long remain the standard work of reference upon the subjects of which it treats.

Gonorrhœa in Women.

By CHARLES C. NORRIS, M.D., Instructor in Gynæcology, University of Pennsylvania. With an Introduction by JOHN G. CLARK, M.D., Professor of Gynæcology, University of Pennsylvania. London: W. B. Saunders Co. 1913. Pp. 521. Price 25s. net.

THE important rôle which the gonococcus is thought by some gynæcologists to play in the production of pelvic disease in the female is shown by the appearance of this monograph of 521 pages. It is naturally an extremely difficult matter to determine the exact number of patients suffering from gonorrhœa, and especially is this the case with gonorrhœa in the female. The published statistics with regard to the frequency of the disease vary very widely, and in many instances no reliance can be placed upon them, because no bacteriological examination has been carried out. In a number of the cases, moreover, such an examination yields no useful information, as the organism is not found, and yet it may well have been the original cause of the disease.

In the year 1901 a Committee on the Prophylaxis of Venereal Disease in New York considered the matter, and estimated that at that time there were 200,000 venereal patients walking the streets of New York. In 36 dispensaries and charitable institutions 14,649 cases of gonorrhœa were treated during the year, but this does not include a number of cases of complications, such as cystitis, venereal warts, and ophthalmia. It has been stated that 80 per cent. of all men in large cities have had gonorrhœa one or more times, that 45 per cent. infect their wives, that 80 per cent. of all operations upon women for disease of the uterus and adnexa are caused by gonorrhœa, and that 20 per cent. of all cases of blindness result from the same cause. Of about 12,000,000 people insured in Germany some 750,000 are annually infected with venereal disease. The author quotes a table showing that the incidence of venereal disease in the different armies of the world varies from 15 per cent. in the Bavarian army to 196 per cent. in the United States army, and a similar table for the navies shows an incidence-rate varying from 66 per cent. in the German navy to 160 per cent. in the American. These figures, even if they cannot be accepted without cavil, show that gonorrhœa occurs with almost incredible frequency, and it must undoubtedly be the cause of an immense amount of suffering and disability in the female sex.

In the chapter on the bacteriology and pathogenesis of gonorrhœa the author describes the best

methods of cultivating and staining the organism and illustrates its effects upon the pelvic organs. In the chapter on sociology the relationship of the disease to sterility and abortion and the important part it plays in the production of blindness are clearly demonstrated. The most interesting chapters are those in which the various methods that from time to time have been adopted in different countries to limit and prevent the spread of venereal disease are described, and in considering prevention the author would require a certificate of health for the male before marriage.

A very important chapter is that in which are described the various means of determining with certainty the presence of the gonococcus and its absence in cases of supposed cure. The pathological changes in the various parts of the genital tract are given in very full detail, and a large amount of space is devoted to a consideration of treatment, conservative and medicinal, radical and operative. A chapter which will be read with much interest is that on diffuse gonorrhœal peritonitis, an infrequent condition. The very important subject of gonorrhœa in connexion with pregnancy is dealt with in a separate chapter, and the prevention of ophthalmia is fully discussed.

For a writer believing, as Dr. Norris does, that the gonococcus is so potent an agent for mischief in the female it is of course difficult to restrict what he has to say on this subject, but it is a pity that he has not been able to place his views within a somewhat smaller compass. A notable example of the diffuse character of the book is the chapter on the treatment of pelvic inflammatory disease, which forms a most complete account of this subject whatever cause it may be due to. Then, again, it is a little difficult to see what precise connexion there is between gonorrhœa and the rupture into the peritoneal cavity or the torsion of inflamed uterine adnexa. All this, however, adds to the completeness of the book, and the author is to be commended for his industry and more particularly for the very full and excellent bibliography he has furnished.

Anatomy, Descriptive and Applied.

By HENRY GRAY, F.R.S. Eighteenth edition. Edited by ROBERT HOWDEN, M.A., D.Sc. Durh., M.B., C.M. Edin., Professor of Anatomy in the University of Durham. *Notes on Applied Anatomy.* Revised by A. J. JEX-BLAKE, M.A., M.B., B.Ch. Oxon., F.R.C.P. Lond., Assistant Physician to St. George's Hospital; and W. FEDDE FEDDEN, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon and Lecturer on Surgical Anatomy, St. George's Hospital. With 1120 illustrations, of which 431 are coloured. London, New York, Bombay, and Calcutta: Longmans, Green, and Co. 1913. Pp. 1311. Price 32*s.* net.

THIS edition marks a considerable advance on former issues, and whilst retaining all the old and well-tested features of a book familiar to so many generations of medical students, it has been brought well up to date and considerably improved. A welcome new feature is the inclusion of illustrations depicting the relations of the epiphyseal lines to the capsules of joints; these have long been wanted. We rather question, however, if the condition shown in Fig. 356 is that normal for the upper end of the ulna. The greatest alteration in the book consists of gathering together the paragraphs on surface anatomy into a separate chapter, and the considerable, and advisable, curtailment of the separate chapter on histology. But the feature which strikes us most is the nomenclature, and we take it as a strong argument for the concerted action of English-speaking anatomists in drawing up an accepted terminology that the editor has attempted a system which is peculiar to this particular work. It is an index of the chaos into which we have lapsed that some text-books adopt the B.N.A. in its entirety, some retain the old terminology, and that this particular one has a system all its own.

It is even difficult to determine the principles upon which this terminology is based. In some cases old names are retained—e.g., axis and odontoid process. In some cases they are entirely thrown over and trapezium becomes "the greater multangular bone," which sounds more terrible than the Latin of the B.N.A. In some cases literal translation of B.N.A. terms is attempted, with the result that such euphonious names as "conchal crest" and "chiasmatic groove" are evolved. Again, "carotid skein" and "coccygeal skein" strike us as failures in the attempt at direct translation. Uniformity is lost in some cases in translation—e.g., the B.N.A. "sulcus sagittalis" becomes "sagittal sulcus," whereas "sulcus transversus" becomes "groove for transverse sinus." Instances could be multiplied almost without end, but the multiplication would be a barren task, and it is enough to say that the terminology appears to us to be defective. This is not the fault of the editor, or of his assistants, but of the times.

Gray's "Anatomy" is a fine old work, and probably the best student's manual that we have at the present day; but the jangled condition of modern nomenclature has rendered an otherwise most excellent eighteenth edition a chaotic scheme of names. In a few years perhaps we shall regard this work as a brave pioneer effort which should have been attempted not by any individual, but by the English-speaking anatomical world.

A Monograph on Albinism in Man.

By KARL PEARSON, F.R.S., E. NETTLESHIP, F.R.C.S. Eng., F.R.S., and C. H. USHER, M.B., B.C. Cantab. Part IV.[1] Text, pp. 136 + xxii. Atlas, plates LIX. London: Dulau and Co. 1913. Price 21*s.* net.

THE fourth part of this monograph contains the magnificent collection of pedigrees of human albinos which has been formed and also one double plate of albino Pekinese spaniels. All the pedigrees are fully explained in the text, which gives also the name of the persons responsible for them. 654 pedigrees of human albinism appear on the plates, and in some of these hundreds of individuals find places. The Chassot-Ray families, which are shown in Fig. 640, Plate LIV., are recorded for eight generations. They were investigated by Cernaz in 1849 and 1850, and have been brought up to date by Dr. Usher, who made a special journey to Switzerland in September, 1909, for the purpose. The journey was, however, something of a disappointment, as albinism appears to have vanished entirely from the last three generations of these families owing partly to the fact that none of the albinos in the fourth and fifth generations left issue. The pedigrees are all neatly drawn, and not reduced so much as to make them difficult to interpret; but we question whether the system of drafting adopted is capable of showing the facts in the clearest method desirable. The symbols representing the individuals in each generation, sometimes 100 or more, are arranged equidistantly in long horizontal rows, the husbands

[1] The review of Part I. was published in THE LANCET of April 8th, 1911, that of Part II. on Oct. 18th, 1913. Part III. has not yet been issued.

and wives being included in the row. It is thus far from easy to tell at a glance which particular group of individuals belongs to each particular sibship. This is perhaps rather a trifling objection, as there is no real ambiguity. There are a few slight errors in the plates; of these some, but not all, are referred to in the list of corrigenda at the beginning of the volume. The absence of the reference number of one diagram on Plate LIV. appears to have escaped the attention of the authors. We draw attention to this because the pedigree is of rather special interest, as it shows a family in which albinism appears to have been latent for eight generations and then to have appeared in three individuals of one sibship. Besides the descriptions of the plates the text contains the bibliography of the monograph with its 700 entries. To some of these a brief note has been appended describing the relevant contents of the work referred to. We understand that the material collected in Part II. is to be statistically reduced and analysed in Part III.

It is a sad reflection that one of the authors, the late Mr. Edward Nettleship, should have died before the issue of the complete work. His great attainments and industry are a distinct loss to scientific work in elucidation of the problems of heredity.

Clinical Laboratory Methods: A Manual of Technique and Morphology designed for the Use of Students and Practitioners of Medicine.

By ROGER SYLVESTER MORRIS, A.B., M.D., Associate Professor of Medicine in Washington University, St. Louis. London and New York: D. Appleton and Co. 1913. Pp. 343. Price 12*s.* 6*d.* net.

THE number of problems on which the clinical laboratory is called upon to aid the physician or surgeon becomes greater every year, and as no one can carry all the details of the necessary procedures in his head continual reference is needed to a library of books dealing with chemistry, histology, and biology.

In the volume before us Dr. Morris has collected together the methods of examination most often called for, and has thus performed a most useful service to all clinical pathologists and to the students of medicine who work in their laboratories. The book deals first with the examination of the urine, setting forth the methods of identifying and measuring the various substances which may be contained in it—salt, albuminoids, pigments, ferments, and parasites—as well as describing the method of estimating the functional condition of the kidneys by the phthalein test. The gastric juice is next dealt with, the various test-meals being described, as also the procedures needed for investigating the stomach-contents when withdrawn; and the examination of the fæces is similarly set forth. Methods are here included for making permanent preparations of the intestinal worms. Chapter IV. deals with the sputum and Chapter V. with the blood, the concluding section being devoted to puncture fluids, including the cerebro-spinal fluid, in connexion with which the Wassermann test is described. Practical directions are given throughout for the performance of the different methods, the author's own knowledge of the matters with which he deals being evident, and references being frequently given to original articles in which the different methods were first described. There are a certain number of illustrations, chiefly of rarer objects such as animal parasites, but also of apparatus: they might perhaps have been more numerous with advantage.

We warmly recommend the book to those for whom it is intended.

Le Problème Physiologique du Sommeil.

Par HENRI PIÉRON, Directeur du Laboratoire de Psychologie Physiologique de la Sorbonne. Paris: Masson and Co. 1913. Pp. 520. Price 10 francs.

THE physiological problem of sleep is a subject on which countless minds have worked, not always with conspicuous discrimination or success, ever since man turned his attention inwards on the problems of his own organism. Physiologists and psychologists alike have propounded hypothesis on hypothesis, till probably more have been forgotten than are remembered; but we do not think that the difficulties in the way of its solution have been more clearly grasped, or an attempt towards that solution more lucidly expressed or more carefully worked out, than in the present memoir, which represents the researches of some 12 years.

The author remarks that it would be impossible now to propound a theory of sleep for which priority would not be claimed, even by "une voix d'outre-tombe," but he asserts with equal confidence that the facts on which such hypotheses should be based are conspicuous by their poverty. He has therefore devoted many years of experimental work to a determination of the actual factors involved in the oncoming of normal sleep, work based on a study both of human sleep and of the sleep of animals. The psychological aspect is left on one side, and attention is concentrated on the physiological phenomena, respiratory, circulatory, and sensori-motor, accompanying sleep. Valuable analogies are drawn from the pathological conditions of narcolepsy, lethargy, and somnolence, and from coma and comatose states. The hibernation of animals is also fully discussed. An elaborate description is next furnished of the physiological and histological modifications produced in animals experimentally deprived of normal sleep, and it is shown that during the artificial prolongation of the waking life a "hypnotoxin" develops in the serum and cerebro-spinal fluid of the animal experimented on. It is further shown that this toxin is not the banal toxin of fatigue; its injection into normal animals (into the fourth ventricle) is followed after some 30 or 40 minutes by an overwhelming and irresistible desire to sleep. The author shows commendable caution, however, in discussing the mechanism of this hypnotoxic effect. His view, briefly expressed, is that this hypnotoxin acts by setting free an inhibitory mechanism in cases where sleep is sudden and profound, while in cases of somnolence there is a direct intoxication of cellular elements, their functional activity being paralysed by a mechanism which is not nervous, but chemical.

The historical chapters on the theories of sleep are very interesting and instructive, nor are they without humour. There is no index of subjects, only one of authors' names; but there is a valuable bibliography of some 61 pages, containing, we calculate, some 2000 references.

The work is one of notable erudition, and it is at the same time lucid and readable. The author does not claim finality for his theory; indeed, he goes so far as to say that a toxic theory is not likely to be of universal applicability. Nevertheless, the experimental basis of his theory is highly elaborated, and the results are very suggestive.

Whatever may be the outcome of subsequent investigation, Dr. Piéron's book will take its place as one of the most scientific contributions to the study of the problem of sleep that have appeared in any language.

Der Blutdruck des Menschen: Ergebnisse der Tonometrie.

Von Dr. ARTHUR HORNER, Assistent der I. Medizin. Abtheilung des K.K. Allgem. Krankenhauses in Wien. Mit einem Vorwort von Professor Dr. J. PAL. 7 Abbildungen in Text. Wien und Leipzig: Moritz Perles. 1913. Pp. 198. Price 6 kronen.

Professor Pal explains that the author in his monograph has incorporated not only his own observations, but he had the use of the rich supply of material collected by Professor Pal himself during many years. After a short physiological introduction the author in the first or general part describes the "indirect" methods of estimating the blood pressure for clinical purposes, and in the second or special part he considers fully the variations of the blood pressures in a whole series of affections, such as infective diseases, diseases of the blood, circulation, abdominal viscera, in gynæcological and allied cases, nervous and surgical diseases, and many others. The illustrations leave something to be desired, both in execution and in number. The literature alone occupies 24 pages. The monograph is a most useful compendium as well as a storehouse of new observations on the blood pressure in man.

General Paresis.

By Professor EMIL KRAEPELIN, of Munich. Authorised English translation by J. W. MOORE, M.D. New York: Journal of Nervous and Mental Disease Publishing Company. 1913. Pp. 200. Price $3.00.

THE present volume consists of the chapter on general paralysis from Professor Kraepelin's "Textbook of Psychiatry" rendered into English. For this purpose it has been subdivided into seven chapters on the general symptomatology, clinical forms, post-mortem findings, etiology, nature of the disease, diagnosis, and treatment. It contains a full and readable account of the manifestations of the affection, and constitutes one of the most complete descriptions of general paralysis that can be found in any language.

Professor Kraepelin considers that tabes and general paralysis must be regarded as quite distinct, although the arguments which he advances are not convincing. There is no reference to the occurrence of the spirochæta in the cerebral tissues of general paralysis; it might have been inserted in a footnote by the translator, but possibly there was no opportunity for doing this. But all recent advances from the serological and other standpoints are fully dealt with. The translation is on the whole well done.

A Treatise on Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs.

By RAKHALDAS GHOSH, L.M.S., Calcutta University, Lecturer on Materia Medica, Calcutta Medical School. Edited by D. H. DEARE, Lieutenant-Colonel, I.M.S., Professor of Materia Medica and Therapeutics, Medical College of Bengal. Fifth edition. Calcutta: Hilton and Co. 1913. Pp. 742. Price Rs. 5, or 7*s.* 6*d.*

IN our review of the fourth edition of this work (THE LANCET, March 18th, 1911, p. 745) we fully explained its nature and scope, and expressed the favourable opinion we had formed of it. The present issue has been ably edited by Lieutenant-Colonel Deare, I.M.S., and in the preface he acknowledges the valuable assistance he has had from Dr. B. N. Ghosh, the son of the author.

This edition has been brought up to date, and special interest attaches to the last two sections of the book dealing respectively with serum therapeutics and with organotherapy. Shiga's antidysenteric serum is discussed. Shiga claimed that by its use he had reduced the mortality from bacillary dysentery in Japan from 35 per cent. to 9 per cent., but in this work it is said that the experience of other observers does not support this statement. An adverse opinion is also given of the value of Yersin's antiplague serum.

The book is very conveniently arranged, especially for reference, and we believe that it will be found useful not only by Indian students and practitioners, but also by Colonial practitioners.

LIBRARY TABLE.

Le Radium: Son Emploi dans le Traitement du Cancer, des Angiomes, Chéloïdes, Tuberculoses Locales, et d'autres Affections. Par LOUIS WICKHAM et PAUL DEGRAIS. Paris: J. B. Baillière et Fils. 1913. Pp. 96. Price 1.50 francs.—*Radium as Employed in the Treatment of Cancer, Angiomata, Keloids, Local Tuberculoses, and other Affections.* By LOUIS WICKHAM and PAUL DEGRAIS. Translated by A. and A. G. BATEMAN, M.B., C.M. Aberd. London: Adlard and Son. Pp. 111. Price 2*s.* 6*d.* net.—The general idea of this small volume can best be described by quoting from the introduction: "What exactly is radium? Which are the diseases in which radium therapy can be useful? To what extent is radium useful in the treatment of cancer? These are the questions which are often asked at the present time, and which we propose to answer by the physical and medical facts within our experience. This work will be limited to a short exposition of the clinical properties of radium, and to a rapid survey of the researches and therapeutic results to which we have specially directed our greatest efforts." It will be seen that the book is not intended for those who specialise in radium, but rather for those who wish for an answer to the questions stated above. Consequently methods and technicalities are omitted; the physical aspect of the subject is stated briefly, but at sufficient length, and the main part of the book is devoted to an account of the diseases—notably cancer—in which the authors have had some success with radium treatment. Many very interesting cases are recorded, and a large proportion of these are illustrated, showing the condition both before and after radium treatment. Considering the great interest in radium at the present time, this book should meet with approval from a large number of the medical profession and not a few of the public. With regard to the English edition, we congratulate the translators on the pleasing way in which they have performed their task.

First Principles of Hygiene. By W. D. STURROCK, D.M. Oxon. Oxford: Clarendon Press. 1913. Pp. 256. Price 2*s.* 6*d.*—In this small volume Dr. Sturrock has presented very clearly a great deal of useful information on matters of personal, public, and domestic hygiene, subjects which he has throughout the book treated as far as possible as questions of applied physiology, and has incorporated with

elementary accounts of the bodily functions which may be affected by the hygienic measures discussed. The result is a very readable book which should be useful particularly to nurses, school teachers, social workers, and others who wish to obtain a working acquaintance with the principal doctrines and practices of sanitary science at the present day, and the reasons for their adoption. The facts and theories of hygiene which Dr. Sturrock gives are well and accurately presented. We may, however, take exception to his statement that in milk the fat should in any case come to 2·5 per cent. by weight. The official standard of fat below which adulteration is to be presumed in the absence of evidence to the contrary is 3 per cent., and this is usually regarded as a distinctly low limit. As in nearly all other works on hygiene, the author cannot refrain from describing and illustrating the D-trap, a contrivance which the most experienced sanitary inspector rarely sees outside a museum.

The Ophthalmic Year Book. Vol. IX. Containing a Digest of the Literature of Ophthalmology for the Years 1911 and 1912. Edited by EDWARD JACKSON, M.D., Professor of Ophthalmology in the University of Colorado. Illustrated. Denver: Herrick Book and Stationery Company. 1913. Pp. 518.—The Ophthalmic Year Book for 1911 and 1912 is well up to the standard we have been led to expect. The enormous labour involved in such productions is usually but scantily acknowledged by the support afforded to them, but the gratitude of those who find reason to use them is perhaps some reward. We notice that this publication depends upon the assistance of the Knapp Testimonial Fund of the American Medical Association. This is not as it should be, and we hope that better support will be accorded in the future. The Ophthalmic Year Book has only one serious rival—viz., Nagel's Jahresbericht für Augenheilkunde. We cannot say that it reaches the high standard attained by the German work, but the latter has two great drawbacks: its utility is limited to those who read German, and its publication is usually delayed till about two years after the date of the literature reviewed. On the other hand, English, and especially American, ophthalmic literature receives in the work under review a fuller measure of consideration, so that we have here a valuable link with our confrères across the Atlantic.

Handbook of Information regarding the Routine Procedure of the Division of Communicable Diseases, 1913. By J. S. BILLINGS, Jr., M.D., Chief of Division, Department of Health, City of New York. Published by the Department of Health, City of New York. Pp. 200.—This little work, besides fulfilling its aim of giving information to the medical profession of the City of New York and other parties concerned in the routine of matters relating to communicable diseases, will be of interest to students of comparative sanitation. Besides local information and ordinary routine administration in cases of communicable diseases as affecting the medical profession, institutions, hotel keepers, house owners, and the public generally, it deals in detail with tuberculosis, typhoid, cerebro-spinal meningitis, acute poliomyelitis, malarial fever, puerperal septicæmia, erysipelas, pneumonia, diphtheria, venereal diseases, glanders, and so forth. The technique of the various tests used is described. The sections on typhoid fever and venereal diseases are new. The method of through and through binding with metallic wire impairs the convenience of the book, as it requires a forcible effort with both hands to keep it open.

La Transplantation Restauratrice du Péroné après les Résections des Os Longs du Membre Supérieur pour Ostéo-sarcomes. Par le Dr. HENRY FAY, de la Faculté de Médecine de Paris; Interne de l'Hôpital Saint Joseph de Paris. Paris: A. Maloine. 1912. Pp. 140.—This pamphlet is decidedly above the average inaugural thesis, indeed it is a real addition to surgical literature. The tendency at the present time is entirely to excise a portion of a bone for sarcoma rather than to amputate; but the limb from which a large portion of a bone has been taken is rendered almost useless unless the damaged bone can be replaced. The fibula seems to offer itself for this purpose, as it may be removed from its natural site without any impairment of function, at least in adults. This treatise deals with the application of portions of the fibula to replace parts of the humerus which have been removed on account of the presence of malignant growths. Ten cases are recorded in which this operation has been performed, and a number of skiagrams taken after the operation show the good results obtained.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVII., Nos. 1 and 2. Cambridge University Press. Pp. 1–148. Price 9s. —On the Production and Utilisation of Glycogen in Normal and Diabetic Animals, by E. W. H. Cruickshank. Minkowski in 1892 showed that after complete extirpation of the pancreas, in addition to glycosuria, there was a rapid disappearance of glycogen from the liver; even on the second day after the operation the liver was practically glycogen-free. The administration of glucose did not give rise to any accumulation of glycogen, while the administration of lævulose caused glycogen to appear in the liver. The author experimented on female dogs from 5 to 10 kgm. in weight. Depancreatisation was performed by Hédon's method. Details are given as to the method of estimating the glycogen in the liver and in the normal and diabetic heart. The author confirms Minkowski's observation as to the almost complete disappearance of glycogen from the liver, which becomes loaded with fat. The latter's results with lævulose feeding the author was unable to confirm. Normally the heart muscle contains about 0·5 per cent. of glycogen. Under conditions of increased activity the heart may use up its stored glycogen in a few hours. The diabetic heart contains considerably more glycogen than the normal heart. Activity of the heart evoked by adrenalin rapidly uses up the glycogen. After death, if the normal or diabetic heart be kept warm, glycogen rapidly disappears, due to a glycogenolytic ferment.—The Changes in the Reaction of Growing Organisms to Narcotics, by H. M. Vernon. The author describes the effects of a large number of narcotics—e.g., eight of the monohydric alcohols—esters and ketones. Great changes in the reaction of growing organisms to these and other narcotics were observed, which he suggests were probably for the most part dependent on changes in the composition of the cell lipoids.—The Volume of the "Dead Space" in Breathing, by A. Krogh and J. Lindhard. The authors criticise

the results of Douglas and Haldane, who from their experiments concluded that the "dead space" may be increased during muscular work to several times the resting volume. The Danish authors find, however, that the effective dead space in breathing is not appreciably altered during heavy muscular work and that the direct method of determining the composition of the alveolar air from samples taken at the end of inspiration and expiration becomes untrustworthy during muscular work.—The Nature of Thrombin and Antithrombin, by B. J. Collinwood and M. T. MacMahon. The authors used solutions of thrombin obtained by digesting well-washed sheep's fibrin for 24 to 48 hours in 5 per cent. NaCl. This thrombin is destroyed by heat (50—60° C.), acid, alkali, and liquor pancreaticus. Antithrombin, which is present in serum, was used. It is destroyed by heat (60—65° C.), acid, and will only act in an alkaline medium; neutralisation does not destroy it, but only inhibits its activity. The authors suggest that thrombin is a protein, and antithrombin a proteolytic ferment; while fibrin is a combination of thrombin and fibrinogen.—The Ileo-cæcal Sphincter, by Arthur F. Hertz. No mixing takes place under normal conditions between the contents of the small and the large intestines, so that fæcal matter that has once reached the cæcum can never return into the ileum. The sphincter prevents the contents of the ileum passing too rapidly into the cæcum. The author gives an account of some recent observations made with Alan Newton by means of bismuth and X rays.—The Normal Movements of the Colon in Man, by Arthur F. Hertz and Alan Newton. The authors record a series of interesting observations under X rays of six normal individuals whilst they were eating an ordinary dinner between five and seven hours after a bismuth or barium breakfast. On two occasions they observed a large movement of the colon.—The Action of Ions and Lipoids upon the Heart of the Frog, by A. J. Clark. This is a highly technical paper, of interest more especially to pharmacologists. The special apparatus for perfusing and recording the movements of the heart are described. The paper is divided into four parts, of which the first deals with action of kations by altering the ionic content of Ringer's fluid. The authors use the term hypodynamic state to indicate that state of the heart where the frequency remains nearly unaltered but the force of contraction and the rate of conduction are both decreased. The second part deals with the action of anions on the hypodynamic heart; the third with lipoid substances on the same condition of the heart. The fourth part is occupied with a discussion as to the mode of action of the substances that revive the hypodynamic frog's heart. The summary of results extend to nearly two pages.—W. B. Hardy contributes a short note on Differences in Electrical Potential within the Living Cell.—The Regulation of Respiration and Circulation during the Initial Stages of Muscular Work, by A. Krogh and J. Lindhard, so far as these refer to changes in ventilation, blood flow, pulse-rate, respiratory exchange, and alveolar CO_2 tension. Evidence is brought forward to show that the rise of ventilation, like the increase in heart-rate, is produced not reflexly but by irradiation of impulses from the motor cortex. As to ventilation, these impulses act indirectly through the respiratory centre by suddenly increasing its excitability towards hydrogen ions.—The Carbohydrate Metabolism of the Isolated Heart-lung Preparation, by S. W. Patterson and E. H. Starling. The now well-known heart-lung preparation obtained from dogs rendered completely diabetic by removal of the pancreas 2–7 days beforehand was used. A series of experiments was also made on the consumption of sugar by the isolated lungs in normal and diabetic dogs, serum being perfused. The lungs—normal or diabetic—use up glucose to about 1·3 to 1·5 mgm. glucose per gramme of heart muscle per hour. The figures for the consumption of sugar in normal hearts are extremely variable. Both in the diabetic and the normal heart the authors by the method of comparative blood analysis were unable to arrive at any definite decision as to the consumption of sugar by the heart muscle. If, however, the diabetic heart is over-stimulated with adrenalin, it uses up not only the sugar in the circulatory blood, but also the amount of glycogen previously stored in its substance. The increased utilisation was not due to the lungs. Some of the previous conclusions of the authors as to the beneficial effects of pancreas on the diabetic heart "must be abandoned," or at any rate are susceptible of another explanation. They are inclined as a result of their work "to abandon the view that the essential, or at any rate the primary, factor in diabetes is the absence of power on the part of the tissues to consume sugar."

The Quarterly of the Federation of State Medical Boards of the United States. Edited by OTTO V. HUFFMAN. Federation Press, Easton, Pennsylvania. Vol. I. No. 1. October, 1913. Price 50 cents.—The first issue of this publication is naturally mainly of local interest, though a perusal of several of the articles shows not a little that is of interest to all who are especially concerned with the subject of medical education in general. Among these may be mentioned the articles on the Homœopath's View-point of Medical Education, by Dr. Royal J. Copeland; Rules and Regulations Governing Examinations, by Dr. John M. Baldy; Discipline of the Character in Medical Education, by the Hon. Justice Eugene A. Philbin; and Universal Reciprocity, by Dr. Beverley Robinson.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS.—This society was organised on June 15th at Minneapolis, with 41 original members, all of whom have been pupils of Sir Almroth E. Wright, of London. The objects of the society are as follows. To unite the physicians of the United States and Canada who are engaged in the scientific study of immunology and bacterial therapy; to study the problems of immunology, and to promote by its concerted efforts scientific research in this department; and to spread a correct knowledge of vaccine therapy and immunology among general practitioners. The officers temporarily chosen are: Dr. Gerald B. Webb (Colorado Springs), president; Dr. George W. Ross (Toronto), vice-president); Dr. Willard J. Stone (Toledo), treasurer; and Dr. Martin J. Synnott (Montclair), secretary. A council of five members was also selected, whose duty it will be to manage the affairs of the society in the interim of the meetings. This council is made up as follows: Dr. A. Parker Hitchens (Glenolden), chairman; Dr. J. Robinson (Temple, Texas), Dr. Oscar Berghausen (Cincinnati), Dr. Campbell Laidlaw (Ottawa), and Dr. Henry L. Ulrich (Minneapolis). The first annual meeting of the society will be held on June 1st, 1914. This is Monday of the week of the annual session of the American Medical Association, and it will be held at the same place. The programme will be made up of original papers dealing with the different branches of vaccine therapy and immunology.

New Inventions.

A STERILISER-TANK FOR INSTRUMENTS.

I HAVE found the steriliser-tank shown in the illustration very useful when operating in private, as it obviates the trouble and delay which occur when it is necessary to get things ready in the patient's home. This steriliser-tank is a cylindrical vessel 11 in. high and 3½ in. inside diameter, fitted with a lid, which is clamped on by three thumbscrews fixed to lugs which are riveted to the cylinder, like the lid of a high-pressure steriliser. In the centre of the lid is a hole which is closed by a screwing plug. The tank is boiled over a Bunsen or Fletcher burner, the instruments placed inside, and the lid, *with the plug removed*,

clamped on. When sufficiently boiled a portion or all of the water is poured off, all that is necessary to do this being to stand the steriliser upside down over a basin; it will rest quite securely on the screws, which act as a stand. When empty, some lysol, spirit, or other solution can be poured through the hole in the lid, the plug screwed in, and the container placed in the bag with the instruments ready to be turned out at the time of the operation, sterilised in readiness for use. When properly screwed up the steriliser-tank is quite water-tight.

The apparatus, which has been made for me by Messrs. Allen and Hanburys, Limited, Wigmore-street, London, W., is of such a size that it will take any ordinary sized instruments required for almost any major operation.

Harley-street, W. THOS. NORTH, F.R.C.S. Irel.

A PORTABLE X RAY PLANT.

Mr. H. Vogelsberg, a practical electrician, writes as follows:—

"In conjunction with Dr. J. W. Hodgson, of Exmouth, I have designed a portable and self-contained X ray apparatus, the purpose of which is to enable a radiogram to be taken at a patient's residence, and thus save a large amount of unnecessary discomfort or suffering in conveying him to the nearest X ray plant. In time of war it could be used in the open field for examination and location of bullets in the wounded. The car on which the generating plant is erected is a 1906 15–19 h.p. four-cylinder Coventry Humber, the flywheel of which is very convenient for driving a dynamo, as it is situated directly under the forward part of the foot-boards. Three steel T girders are fixed under these boards from the main framework so as to take the weight of the dynamo. When the latter is placed on the car it is raised off a small truck on which it rests when not in use by means of a Weston hoist, and pulled along an overhead rail provided for the purpose in the motor-house until over the position which it has to occupy in the car, and lowered on to its bolts. These bolts can be removed when the car is not required for X ray work. After the car has been driven to the place where it is to be used, the belt is passed round the flywheel and the ends fastened together over the pulley. The dynamo is raised, and the belt made taut by turning round the hand-wheels provided for the purpose, a lock-nut keeping all tight. The dynamo is a continuous current machine, and was supplied by the Cavendish Electrical Company, London. It has an output of 75 volts 12 ampères at 1250 revolutions per minute. The pulley fitted to it is in ratio to the flywheel as one to two; but it would be an advantage to fit a larger pulley on the dynamo shaft, as a steadier speed could more easily be maintained with the engine running faster. The current on leaving the dynamo is carried to the switch-board and passes through the main switch, ampèremetre, and fuse, to the terminals of the switchboard. The mercury interrupter is of the ordinary jet pattern, working in a non-oxidising gas, the gas being carried in a bladder. This type of interrupter has undoubted advantages, but if absolute simplicity is aimed at, one working in oil would be perhaps preferable. The interrupter is worked by a small electric motor, the power for which is brought from the switchboard by means of a flexible wire. Both motor and interrupter are fastened down upon a shallow box which contains the condenser. The advantages of having the interrupter outside the patient's house are twofold: firstly, the elimination of noise; secondly, the man in charge of the motor and plant can look after it and see that it is working properly and well, thus leaving the medical man free. The conductor used for carrying the electricity from the generator to the house is a 7/21 twin cable, carried on a reel in a cable-box. A binding screw is fixed on each end of the real axis, and the inner end of the cable is permanently connected with these, so that only the necessary amount of wire need be unwound, the red end of the axis connected to the interrupter, and from that to the positive pole on the switchboard, and the black end direct to the negative pole. The framework of the couch is made of teak, as light as is possible to be consistent with strength, and can be raised or lowered at one end; the other end can be rested against and fastened by straps to the patient's bed, or can be rested on a trestle. A second switchboard is provided in the patient's room, and stands flat on the ground, a little to the right of the operator, who keeps his foot on a pedal switch. The pedal switch in normal position connects the resistance with the generator; when the pedal is depressed the primary of the coil is connected through the variable resistance. An incandescent pilot lamp gives warning when the current is flowing. The X ray bulb is fixed in a safety case, the inner portion of which is lined with lead oxide. Glass supports are fixed across the openings at each end of the box. An iris diaphragm is fitted over a circular opening on the top of the box, to allow adjustment during the use of the rays. The whole box stands on ball castors, so that it can be moved about under the couch into any position that may be required. The coil used is a Sanax 12 inch intensified coil, which works very well and is free from back currents. Although the apparatus described has not yet arrived at the state of perfection that one would quite wish for, there is reason to suppose that results as satisfactory can be obtained with it as with a fixed plant."

THE SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The annual general meeting of the Fellows and Members will take place at the College, Lincoln's Inn-fields, W.C., on Thursday, Nov. 20th, at 3 P.M. Mr. J. Brindley-James, president of the Society of Members, will move this resolution:—

That this twenty-ninth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which as now constituted only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

Dr. A. S. Morton will move:—

That this meeting of Fellows and Members requests the Council to include in their next annual report a balance sheet showing fully and without reserve the assets and liabilities of the College on Midsummer Day, 1913.

A resolution calling for the immediate appointment of a special committee, composed equally of nominees of the Council of the College and of the Society of Members, has been sent in but ruled out of order. All communications should be made to Dr. Sidney C. Lawrence, honorary secretary, 22, Latymer-road, Lower Edmonton, N.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 15, 1913.

The Psychology of Railway Accidents.

In the appalling series of railway disasters which have occurred within the last few weeks in this country and abroad, it is a very striking circumstance that in almost every instance the source of the accident has been traced to a failure in that human factor on which in the ultimate result the proper functioning of even the most ingenious mechanism must depend. These lamentable accidents have been so numerous, and the error or negligence of the driver or the signalman in each case has been so similar in character, that it is difficult to dismiss the suspicion that in this succession of catastrophes we have to deal with something more than a mere casual variation from the normal average of such events; and this suspicion will be strengthened when we take note of the many attendant circumstances which seem to indicate the operation of novel psychological influences, some of them of a more general character than can be explained by temporary conditions affecting a particular industry.

It would, of course, be absurd to found on even a larger number of such instances a general charge of inefficiency and recklessness; and a charge of this sort would be doubly unjust when, as in the present case, it would be urged against a body of public servants whose past record has been so admirable. But without making any such sweeping accusation, it is quite legitimate to inquire whether these instances of negligence may not be related to that ominous change in the mental outlook of the industrial classes of which there have been so many and such grave manifestations in the last few years. The suggestion might seem fanciful, were it not confirmed by the attitude in this connexion of those who claim, and apparently with authority, to speak for the mass of railway workers. The agitation for the release of the Aisgill driver, no less than the ferment excited by the arrest of the man responsible for the disaster to the Paris-Marseilles express, shows with painful clearness that in its latest phase the sense of corporate unity amongst railway servants has become associated with a lessened sense of responsibility towards the community at large. And the same spirit of cynical indifference to the common welfare, the same reckless pursuit of class interest is, of course, the very essence of the syndicalist movement, where the favourite weapon, the general strike, owes what efficacy it possesses to its power to inflict suffering on the public. But it is obvious that the mental attitude which accepts such methods, and which by their acceptance is strengthened and confirmed in its vicious direction, is fundamentally unhealthy and perverted, and by reason of its morbid character must react upon the whole disposition and activity of the individual who adopts it. The temper of syndicalism represents in the group something akin to the temper of paranoia in the insane personality; and just as the self-centred tendency of the persecutory lunatic warps his sense of proportion, makes him too keenly sensitive of his own rights and callous as to the rights of others and the duties which he owes to others, so does the collective paranoia of syndicalism lead to a similar loss of moral balance in the attitude of the given industrial group towards the community of which it should form a part. And this collective spirit naturally influences for evil the individuals who constitute that group; it fosters a state of emotional irritability, of impulsiveness, which is unfavourable to clearness of judgment and accuracy of perception, and which, therefore, might well contribute to such errors and omissions as those responsible for the recent epidemic of disaster. We are bringing no charge of recklessness, and certainly no charge of malice, against particular persons; but we suggest that the conditions of railway travel to-day require most careful attention, and the attention should not be focussed upon the details of this or that catastrophe.

It may not, then, be too fantastic a speculation to connect these sinister occurrences with the spirit of unrest which has pervaded the industrial world of late; and the mere possibility of such an influence should at all events serve as a warning against an attitude of passive acquiescence in the conditions which have brought that spirit into being. These wider aspects of the industrial problem lie outside the scope of this article, nor do they perhaps admit of being so fitly considered from the special point of view which is here adopted. But it may not be out of place to say that in dealing with them we should act on the principle which is the ideal of medical practice, the principle that treatment should be directed to causes rather than to symptoms. If industrial discontent and unrest are contributory causes of inefficiency and recklessness in individual workers, these causes are in their turn the effects of other causes, and it is to the removal of these deeper sources of evil that the efforts of social reform should be directed. And in this task a due consideration of the psychological factors of the problem will be an aid of no small value. Lying beneath most of the varied manifestations of disorder and eccentricity in modern life may be detected as a potent influence the difficulty of nervous adaptation to a too rapidly changing environment. Even the firmest believer in the essential capacity of the race would hardly maintain that human intelligence has progressed in a degree at all commensurate with the development and multiplication of the numerous instruments

devised and fashioned by those gifted and subtle intellects, whose discoveries have revolutionised science since the middle of the last century. It is to the new environment of ideas and sensations created by these discoveries, and by their practical applications, that we have to adapt ourselves to-day; and the process, alike for society and for the individual, must at best be slow and arduous, and will inevitably be attended with such occasional failures as find expression in the spread of social and industrial unrest, with an accompanying growth of neuroses.

Insured Persons and Herbalists at Worcester.

WE called attention last week to a decision of the Insurance Committee of the county borough of Worcester which by the vote of a majority, led by the chairman of the committee, decided to allow certain persons desirous of making their own arrangements for medical treatment under the National Insurance Act to do so with a herbalist. We may say at once that we regard the decision as a wrong one, not meaning merely that it is foolish and prejudicial to the insured persons for whose benefit the Act was passed, and for whom it is to provide "against loss of health and for the prevention and cure of sickness," but wrong in law according to every reasonable interpretation of the Act and the regulations made under it. The regulation under which the Worcester Insurance Committee came to the decision referred to orders that:[1] "The committee may allow insured persons resident in the county, whether individually or collectively, in lieu of receiving medical benefit under the regulations made by the committee, to make their own arrangements for receiving treatment (including medicines and appliances);" and the next regulation stipulates that where the committee shall be "of opinion upon such evidence as they think sufficient that the arrangements made by any person who has been required or allowed to make his own arrangements under this regulation are satisfactory—that is to say, such as to secure treatment (including medicines and appliances) not inferior in nature, quality, or extent to that provided under the arrangements made by the committee, and to comply in other respects with any conditions which by reason of any scheme for the distribution of Parliamentary grant must be complied with in the case of treatment provided otherwise, there shall be made towards the cost of that treatment such contribution calculated and paid in such manner as hereinafter in these regulations provided." If the Worcester Insurance Committee is right in considering that the above regulations allow it to spend the funds entrusted to it in paying herbalists or any other unqualified persons who pretend to treat the sick, we say without hesitation that it has discovered a way by which to stultify and reduce to ineffectiveness in particular instances a statute passed "to provide for insurance against loss of health and for the prevention and cure of sickness." We say in particular instances because we are satisfied that the good sense of the community will not allow it to entrust itself as a whole to quacks, Christian Scientists, faith-healers, and bone-setters; but at the same time we believe that one of the general objects for which the Act was passed was to protect or divert, both generally and in particular instances, members of the working classes from the dangers of recourse to unqualified advisers in matters concerning their health.

It may be pointed out that anyone, insured or not, may be treated by whomever he pleases, or by no one. But this is a question of treatment at the expense of the Insurance funds, and if these funds are to be distributed to persons for the express object of their being used to remunerate unqualified persons, there is no reason why druggists should not also be included among those with whom the insured may make their own arrangements. We do not mean to suggest that the registered pharmacists, who are doing such good work under the Act, not always upon highly remunerative terms, would wish to compete with herbalists for patients, but we suggest that they would be as well or better qualified to supply their patients with effective treatment. The matter, however, must depend not upon what the medical profession or the Worcester Insurance Committee or the framers of the Insurance Acts may consider right in principle, but upon what the Acts and the regulations made under it may provide. Obscure reference was made in the recent discussion at Worcester to utterances of a Cabinet Minister in the House of Commons and to dicta of the Insurance Commissioners; these clearly will not affect the question. The regulations from which we have quoted the material words do not say that persons are to be allowed to make their own arrangements for "treatment by duly qualified medical practitioners," or the matter would be beyond argument; they use the term "treatment" without qualification except by the parenthesis ("including medicine and appliances"). Reference to the definitions contained in the regulations from which we have quoted shows that treatment means "medical attendance and treatment of insured persons." Here again there is no direct reference to a "registered" or "duly qualified medical practitioner," but the latter description of those who are to be placed on the panel occurs in the opening words of Section 15 of the Act of 1911. And nowhere, we say with confidence, in the Acts of 1911 and 1913, or in the regulations either of the Insurance Commissioners or of the Board of Trade, is there the smallest reference, or hint or suggestion of a reference, to any kind of treatment being supplied under the Act, or at the expense of the

[1] National Health Insurance (Administration of Medical Benefit) Regulations, 1912, made under Section 15, Subsection 3, of the National Insurance Act, 1911, which also see.

funds provided by it, otherwise than at the hands of those for the testing of whose qualifications and for whose registration the State has provided.

In this connexion Subsection 4 of Section 15 of the Act is particularly to the point, but we might quote almost any section or regulation referring to medical benefit to the same effect. We need hardly add that every medical certificate purporting to be given under the National Insurance Acts or under any other Acts of Parliament, whether relating to sickness, death, or any other matter, is valueless unless it is given by a registered medical practitioner, and that as a general rule employers, Friendly Societies, and others who require evidence of the sickness or death of individuals in matters not regulated by Acts of Parliament are equally strict in their demands, under the guidance of ordinary prudence and good sense. As to the precise manner in which the question should be raised we are diffident in expressing an opinion, as we do not find the Insurance Acts explicit in providing for the settlement by the Commissioners of disputes between the minority of an Insurance Committee and a majority upon a point of law, as to which the latter is alleged by the former to have taken a wrong view. The Commissioners are, however, certainly interested in the question, because under Section 54 of the Act of 1913 they have to pay out of the National Health Insurance Fund sums required to meet expenditure "properly" incurred by Insurance Committees, and we have little doubt that upon the audit of the Worcester Insurance Committee's accounts the matter could be raised, if not referred directly at the present stage to the Commissioners. There is also the possibility of an application to the courts to prevent the improper expenditure of money by the Committee being the proper course, but we imagine that this would not be necessary unless the Commissioners declined to intervene in an advisory capacity or otherwise. As a result we predict with some confidence that the majority of the Worcester Insurance Committee will find that treatment by a herbalist is not medical treatment within the meaning of the Insurance Acts, whatever may be their personal views as to its being not inferior in nature, quality, and extent to that provided by the medical profession.

Reversion to Type.

THE greater part of THE LANCET this week is printed in larger type than any issue of the journal has ever been, with the exception to be mentioned, the form now adopted being a practical response to representations which have reached us lately from many readers. The larger type now employed, and for the future to be employed, is almost precisely the type in point of size in which THE LANCET made its first appearance one Sunday morning in 1823, and constitutes a reversion as accurate as most of the examples of that phenomenon which from time to time are illustrated in biological articles. Why the Founder of THE LANCET published his first number on a Sunday morning we have not the least idea; but considering the haste in which all the proceedings in connexion with the original issue of THE LANCET were taken, the probability is that the date of appearance was an accident, and that the selection of the original type had no better reason. Only for one year was the paper printed in a type which is just fractionally larger than the one in which this article is printed, for in November, 1824, the type was introduced in which from that date until November, 1913, THE LANCET has made its appearance. During these 90 years the number of representations to us that the size of the type was inconvenient has been, on the whole, not at all large, if we may make this deduction from a personal experience of about a quarter of that period; but the significant fact is that such representations as have reached us have nearly all been made within the last decade, and have certainly increased in number quite recently. There is no doubt now in our minds that our public will find a larger type agreeable and convenient, and we make the change therefore with pleasure, accompanied with a hope that the next revolution in our printing arrangements will, in accordance with precedent, be delayed for another 90 years. For we like to think that such longevity is assured.

From one old member of our staff among those to whom our intentions were mentioned recently, we received a communication suggesting that we were supplying a great example of racial decadence, inasmuch as, if the demands for a larger type to which we were proposing to accede were well founded, it was obvious that the sight of the medical profession at the beginning of the twentieth century was not so good as it had been during a large proportion of the nineteenth century. But we think that this whimsical protest against what he of course called "change for the sake of change" misses the reasons which underlie the desire of our readers for a larger type. If we may draw general lessons in sociology from such a concrete example as the alteration in the printing of a professional newspaper, we would say that we have here one more proof of the great necessity of the times in which we live—namely, the necessity of "speeding up." We telegraph and telephone instead of writing letters; we use machine-driven vehicles on road or rail instead of trusting to our legs or to our horses; and these things not so much to save ourselves trouble as to give ourselves more time in which to take further trouble. We do not recognise any decadence in securing freedom from friction where it can be obtained, when the resulting smoothness is expressed in a larger output of work. THE LANCET in its present guise is easier to read than it has been for 90 years.

Annotations.

"Ne quid nimis."

MINOR EPIDEMICS OF POLIOMYELITIS IN ENGLAND.

WE publish this week two reports of small epidemics of acute poliomyelitis, one of 6 cases in the neighbourhood of Deddington in Oxfordshire, and the other of 8 cases at West Kirby in Cheshire. Both present certain features of interest to which it may be well to direct attention. In the Deddington epidemic, which seems to have followed a somewhat circular route, not unlike what has been observed in one or two of the smaller French epidemics as recorded by Netter, it was apparently impossible to trace any direct contagion, even by the interposition of poliomyelitis carriers, except in 2 cases, and in regard to them the circumstances are not particularly striking. On the other hand, the remark is made that all the cases lived in close proximity to stables. Reference has already been made in the columns of THE LANCET to the experimental work of Anderson and Frost on the transmission of poliomyelitis by means of the stable fly (Stomoxys calcitrans), and it is suggested in connexion with this Deddington epidemic that it originated in infected stomoxys biting the patient whose case is No. 1 in the series. At least one other small epidemic, recorded by Dr. Edwin Bramwell as occurring at Tillicoultry, is known to have been localised in the neighbourhood of farm steadings, and it may well be that these epidemiological facts will serve to throw some light on the spread of the disease in certain localities. At the same time, it must not be forgotten that in the larger epidemics there are innumerable instances of spread of the contagion by totally different methods, and in view of the fact that poliomyelitis is more or less endemic in London it is improbable that its continuance is associated with the presence of the stable fly. However, the interesting features of the Deddington epidemic are worthy of careful consideration. The analogies between the Borna'sche Krankheit of horses and poliomyelitis are, in the present state of our knowledge, scarcely definite enough to lay much stress on. The outbreak of acute poliomyelitis at West Kirby is important inasmuch as the first case occurred last year, in July, as a sporadic or isolated instance of the affection; seven fresh cases occurred in July and August of this year. From what we have learned of the infectivity of the virus and the possibility of its being carried by individuals who do not actually suffer from the disease, there is nothing remarkable in the reawakening of the disease at West Kirby this summer. There is every reason to suppose that the virus lived during the winter in the nasal mucous membrane of one or more individuals related to the primary case. In this epidemic direct infection by contact seems very probable in a number of the cases. Suspicion has fallen on certain vermin—viz., lice—as being perhaps connected with the origin of the disease in the West Kirby series, and where there is still much that is obscure, it behoves the epidemiologist to weigh carefully and without bias the evidence for and against. It has frequently been remarked in connexion with poliomyelitis that domestic animals have been kept in many houses where the disease showed itself. Yet there are just as many instances of the affection in which no association with the presence of domestic pets is demonstrable. Nevertheless, in the West Kirby epidemic the alleged transmission is one to which the attention of those who have the opportunity of experimental investigation will, we trust, be directed. The somewhat curious circumstances surrounding the first appearance of the disease in this district ought not to be forgotten. The documentary value of these two reports is considerable. From small and localised epidemics, as in this Upminster and Tillicoultry instances, much can be learned of significance from the epidemiological viewpoint, and we trust that any other localised groupings of the disease of this summer or autumn will not go unrecorded.

VALLEY FLOODS AND PUBLIC HEALTH.

AN interesting report has recently been presented to the Surrey county council by the consulting medical officer, Dr. Edward C. Seaton, on the Wey Valley Floods in Relation to Public Health. In discussing the influence of floods on health Dr. Seaton remarks that it hardly needs much argument to demonstrate their ill-effect when the dwellings of populous areas are partly submerged, and when the necessaries of life have to be provided for by the help of boats. Even floods of far less magnitude than those which occurred in Nottingham in 1876 and in Norwich last year constitute, he says, not only an acute source of discomfort for the unfortunate residents, but leave behind them the foundation of illnesses of many kinds and often of a chronic nature. Further on he observes that the extent to which ill-health arises is not defined, for there are conditions of the soil which sometimes follow floods and which are liable to become continuing causes of disease. There are, for example, the conditions of the saturation and wetness of the earth upon and near to the surface, which have long been recognised as the underlying causes of illness, either directly or indirectly, sometimes through the medium of insect life. Reference is made to the classical reports of the medical department of the Privy Council upon this subject, and also to a letter written by Dr. R. W. C. Pierce (medical officer of health of Guildford and Woking) to the River Wey Floods Association, in which he drew attention to the remarkable lessons taught by the experiences of the Fen districts of Lincolnshire and Cambridgeshire, where ague was prevalent until a great land drainage system was introduced, when the disease practically disappeared. Instances are also quoted by Dr. Seaton of the salutary effect of building houses above a certain level in districts liable to be flooded by an overflowing river. With these improvements in structure and levels the regional prevalence of phthisis has been lessened. In Leicester, again, the general death-rate has been remarkably reduced since the establishment of a system of drainage which has for some years been held up as a model for other towns similarly situated as regards their levels. Improved drainage is unquestionably an important factor in regard to rendering low-lying places in the neighbourhood of rivers healthy to live in. Much land, says Dr. Seaton, in regions of the valley of the Thames and its tributaries, which is at present uninhabitable, could in time be reclaimed by well-considered comprehensive measures having for their object the unimpeded flow of water right away from its outlet

to the tidal river at Teddington Weir during times of threatened floods in its higher reaches. A well-considered scheme on the lines suggested would, in Dr. Seaton's experience, prove an immense boon to the country generally, including certain parts of Surrey, inasmuch as it would be the means of removing a potent factor in disease. Further, labourers' dwellings should be planned with due regard to health requirements. Dr. Seaton considers that by sufficient drainage of low-lying, damp regions which are at present uninhabitable, these regions would be reclaimed to the public advantage.

THE CONTROL OF MASSAGE AND OTHER ESTABLISHMENTS IN LONDON.

THE Public Control Committee of the London County Council have reported to the Council as to the details of the proposals for the control of massage and similar establishments recently adopted. The subject has been thoroughly discussed in our columns from several aspects.[1] The committee stated that nursing homes were proposed to be included, but added that with regard to the great majority of nursing homes, and many establishments providing the other forms of treatment, there was no suggestion as to their being carried on in any other than a proper manner. It was sometimes alleged that nursing homes were conducted by unqualified persons or with an insufficiently qualified staff; as to this the committee was not in a position to judge. They did not consider it to be the duty of the County Council to interfere in such matters. They felt, however, that the principle of registration was the best one that could be adopted, the right of appeal to a court of summary jurisdiction being given. The report stated that special means must be taken to deal with attempts at evasion by adopting trading descriptions other than those specified by the Council. Furthermore, if the proposed legislation was to be effective severe penalties must, they concluded, be imposed, while all powers obtained ought to be exercised by a central authority. The powers proposed to be acquired by registration are very full. The premises to be registered are to comprise those used as nursing homes or for the purposes of massage or manicure or for administering curative treatment by light, electricity, or baths, or other similar treatment, but all Poor-law institutions, and such hospitals and other premises as may be later defined, are to be exempt from registration. Where the registration authority has reason to believe that the title of a business has been adopted as a cloak to the carrying on of a disorderly house, its officers having a special right of entry, subject to regulations, will proceed to action. The penalties provided are £50 and a daily penalty not exceeding £20 for a first offence, and the same maximum penalties, with or without a term of imprisonment, in respect of a second or subsequent offence. In the case of a company it is provided that proceedings may be taken against all or any of the directors as well as against the company. The committee have also proposed that—

> It shall be an offence for any person or company knowingly to advertise or print or publish an advertisement of any owner or occupier who has been struck off the Register,

a method of action which shows that the source of the evil is properly recognised. The proposals of the Public Control Committee were approved by the Council, and action will follow upon the lines indicated.

[1] THE LANCET, Oct. 18th (p. 1131) and 25th (p. 1206).

THE TRIAL OF BEILISS.

THE Justschinski trial has concluded, with a verdict of acquittal for Beiliss, the Jew accused of murdering a Christian boy for the purpose of obtaining Christian blood for ritual use. A different verdict would have been unthinkable in any civilised country save Russia. But in Russia, and in a leading university town, possessed of all the appurtenances of an advanced civilisation, the barbarous belief that such murders do take place still prevails, and until the very end of the case Beiliss's fate hung in the balance. Indeed, skilled experts seem to have been so affected by the prevailing belief as not to realise that the established medico-legal facts in the case, so far from lending support to the accusation against the accused, failed completely to substantiate any likelihood of a ritual murder. The matter is really brought to a very clear issue in a pamphlet entitled "Der Fall Justschinski,[1] Ofizielle Dokumente und private Gutachten." This pamphlet contains first the following protocols: the post-mortem record of March 2nd, 1911; the second post-mortem record of March 26th, 1912; the report of Professor J. A. Sikorski, of the University of Kieff; Protocol 61, Report of Professor Obolonsky and Prosector Tufanow. The second part consists of the opinions thereon of Professor Haberda, of Vienna; Professor Ziemke, of Kiel; Professor Lacassagne, of Lyons; and Professor Thoinot, of Paris; Mr. A. J. Pepper, Dr. Charles A. Mercier, and Dr. W. H. Willcox, of London; Professor Bleuler, of Zürich; Professor Borhöffer, of Berlin; Professor Boedeker, of Zehlendorf; Professor A. Forel, of Zürich; Professor Meyer, of Königsberg; and Professors v. Jauregg and Obersteiner, of Vienna. None of these opinions lend any support to the theory of ritual murder put forward with circumstantial detail by Professor Sikorski in a report which is traversed in a lucid and weighty manner. From perusal of this pamphlet it seems to us quite clear that the luckless boy was not killed with any design of securing his blood for any purpose, and was not tortured. The act was probably that of a lunatic.

[1] Berlin, H. Boll, 1913.

INACCURACY OF AMERICAN MORTALITY STATISTICS.

A STARTLING article on the inaccuracy of American mortality statistics, written by Dr. Horst Oertel, pathologist to the Russel-Sage Institute of New York, has been sent to us, extracted from a journal called the *American Underwriter*, and its lessons may not unprofitably be taken to heart by some persons in this country who justly fall under Dr. Oertel's censure as dogmatic writers on the statistics of fatal diseases without troubling to test the reliability of the data upon which their statements are founded. "It is strange," says Dr. Oertel, "that, notwithstanding much discussion about improvements in the methods of recording and interpreting these statistics, the reliability of the death certificate itself is generally accepted." He then proceeds to show that the errors and inaccuracies in the present returns of causes of death are so great that it may fairly be doubted whether deductions based on the evidence of American statistics are at all trustworthy. The majority of American

death certificates, even those of the larger hospitals, which represent the best available records, are based mainly on bedside diagnosis only. The testimony of American physicians who have systematically performed necropsies appears to be to the effect that the majority of clinical diagnoses are either wrong or quite insufficient to establish the cause of death. From his own experience Dr. Oertel does not hesitate to state that even at the time of the necropsy the medical man is frequently uncertain about the character of the disease and arrives at the truth only after prolonged study. The statistics of Dr. Cabot, of Boston, are instructive in this regard. He has published the percentages of correct diagnoses of what appeared to be the most important lesions revealed by 3000 necropsies in that city, from which it appears that even in the hands of an experienced diagnostician the diagnosis of certain diseases was proved correct in the case of not more than 25 per cent. of the deaths; whilst the percentage did not exceed 75 per cent. in the case of any other fatal disease in the list. Commenting on Dr. Oertel's paper the editor justly remarks that if the actual causes from any considerable proportion of deaths have been incorrectly diagnosed, and the death certificates made out accordingly, the whole structure of a country's mortality statistics fairly totters, and the grouping of classes, ages, and ratios is necessarily subject to the most serious doubts. It is this gravest of dangers in the compilation of American mortality statistics to which Dr. Oertel directs attention, and, in our judgment, the subject is worthy of the serious attention, not of vital statisticians alone, but of all the more important medical societies, medical colleges, and hospital authorities of the country.

ALFRED RUSSEL WALLACE.

THE death of Dr. Alfred Russel Wallace occurred, at the ripe age of 90, on Friday of last week, Nov. 7th. He will for ever be remembered by his association with the great alteration in all our scientific standpoints brought about by the establishment of the modern doctrines of evolution. As is well known, Wallace enunciated the theory of natural selection at the very time when Darwin, after 20 years of solid work, had arrived at similar conclusions, though after more profound and wide-ranging investigations. The attitude of the two philosophers was marked by the greatest generosity to each other; and when the world elected, and elected quite rightly, to give to Darwin the chief credit, Wallace's acknowledgment of the justice of the verdict was complete. The statement that has been made in many places lately that the work of Wallace was put aside and that he himself was unduly neglected does not bear investigation. He was not a candidate for the Fellowship of the Royal Society until quite late in his career, but that body elected him as soon as the usual formalities were complied with, and he was the recipient of one of their most important medals. Wallace was an individual and romantic thinker, but his intuition did not always serve him as well in his attempts to solve other problems as it had when he had jumped at the correct explanation of the processes and changes in organic life. Some of his writings, while they displayed independent judgment, were not marked by the discrimination that might have been expected from so famous a man, and his attitude towards one phase of scientific medicine was unfortunate. But it would be wrong to be blind to the value of grand receptive intelligences like his, because in one or two points the conclusion which Wallace came to appears to us to be hasty. Medicine combines with the scientific world in deploring the loss of a leader, and in acknowledging the debt of the world to a pioneer in the interpretation of the universe.

OCTOBER AT HOME AND ABROAD.

OCTOBER was a very mild month, with a succession of winds from the south and south-west, bringing abundant rain, but occasional clear skies, which allowed the sun to shine for about the average number of hours for the month. October is normally the wettest month of the year in nearly all parts of this country, and generally gives at least one bad wind storm. On this occasion, however, the cyclonic systems either remained on the Atlantic or became reduced in energy on arriving over these islands, and except on some of the most exposed points of the western and northern coasts the wind seldom rose to the strength of a gale. On the ocean to the west a vast area was frequently in a very disturbed condition, some of the storms being very severe, and continuing for days. In England the thermometer was often 5° or 6° above the normal level both during the day and at night, and sometimes the divergence was greater, but as there were a few relatively cool spells, the mean for the whole period was no more than 3° or 4° above the average. At Kew, where the maximum temperature was as high as 60° or higher on 17 afternoons, the mean, 60°, exceeded the average by 4°, while the mean minimum of the night, 46°, was 3° above. At Bath, Torquay, Bournemouth, and Brighton the mean maximum was 61°, and the mean minimum also higher than at Kew, except at Bath. At Torquay and Brighton the figure was 51°, and at Bournemouth 48°. In the Midlands the mean maximum temperature was a little below 60°, and in the north of England, as represented by Harrogate and Buxton, 54°, and the mean minimum 44° or 43°. Paris was warmer than the mainland of this country during the day, recording a mean maximum of 62°, the same figure as Jersey, but at night it was colder, the mean minimum being 45°, no higher than that at Bath. At Brussels the corresponding figures were 61° and 46°, but at Berlin they were lower, the mean maximum of the day only reaching 57°, and the mean minimum of the night being as low as 42°. Over the southern regions of Europe there were few days with a lower temperature than 70°, while in southern Italy the thermometer occasionally exceeded 80°. Round about the 23rd the sheltered thermometer fell to a little below the freezing point in the Midlands and north of England, and to some degrees below it in central Ireland, but no frost was registered at Paris or Brussels, and only one, on the 26th, at Berlin. In most parts of this country there was more or less rain on at least 18 days. In the metropolitan area the total fall was about 3·5 in., exceeding the average by about 0·75 in. Bath had rather less rain, its total of 3·1 in. only exceeding the average by 0·05 in., while at Harrogate there was no more than 2·8 in. against an average half an inch greater. Along the south and south-west coasts there was, as a rule, more rain than in London. At Brighton, where as many as 20 days furnished a measurable amount, the aggregate was 4·2 in., a figure 0·7 in. more than the normal. At Bournemouth it was 3·4 in., at Torquay 3·7 in., or 0·4 in. less than

the normal, and at Newquay 5·0 in., or 1·2 in. more than the normal. In the Midlands the fall generally exceeded the average, although in some localities rain was less frequent than in the south and south-west. At Nottingham there were no more than 14 days with rain, against 20 in Brighton and Torquay, but the total fall, 3·64 in., was an inch above the normal. At Buxton, where an average October gives 5·4 in., last month yielded no more than 4·6 in. On the Continent the weather was generally much less rainy than in this country. At Berlin the total fall was 0·6 in., at Brussels 1·4 in., and at Paris 1·8 in. In the southern countries there were a few heavy local falls, but the general character of the weather was dry and bright. In these islands it is now far too late for the total duration of sunshine for the year to equal the average, but last month did its best here and there to make up the deficit, although its best was not very striking. At Kew the total number of hours of bright sunshine was 97, an excess of only 3 hours on the average, but in many places the deficit grew even larger than at the end of September. At Brighton the total of 114 hours was 3 hours less than the normal, and in the Midlands and north of England the weather was mostly less bright than usual. At Nottingham the total sunshine, 76 hours, was 17 below the normal, and at Harrogate, where the figure was 67 hours, it was 28 hours less. On the extreme south-western coast the sky cleared more frequently. At Torquay the sun shone for 113 hours, about the average figure, and at Newquay for 122 hours, an excess of 11 hours on the average. Jersey was brighter than any place farther north, having the good total of 147 hours against an average of 127 hours. Absolutely sunless days were not often experienced in any part of the kingdom. At Kew there were only 4, and in the Midlands 6, 7, or 8, while on the south coast there were only 2 or 3, and at Newquay not one. At Jersey, however, there were 3 sunless days. At Kew the brightest day was the 31st, when the sun shone during seven hours, but over the kingdom generally the maximum amount of sunshine was recorded on various dates—mostly after the 15th. Some places on the south and south-west coasts had between 8 and 9 hours on one day, and a few between 9 and 10 hours. Compared with the south and south-west of these islands and Jersey, Paris was dull. On 5 days the sky was overcast throughout, and the aggregate amount of sunshine for the month was no more than 106 hours, or 41 hours less than at Jersey and 16 less than at Newquay.

THE ANTHRAX COMMITTEE.

AN opportune announcement was made at the close of last week by the Home Secretary that he has appointed a committee of nine to inquire into the dangers from infection by anthrax in the various processes incidental to the wool and hair industry, and to consider and report upon any amendments to the existing regulations which may be desirable. The chairman is Sir Thomas Whittaker, M.P., and the committee contains representatives of the more important interests affected, such as the Bradford Chamber of Commerce, the Bradford Trades and Labour Council, the National Union of Woolsorters, and the Bradford and District Wool Top and Noil Warehousemen's Union. The medical and scientific representation although small, is extremely efficient. It is certain that with Professor F. W. Eurich, of Leeds University, and Dr. T. M. Legge, of the Home Office, upon the committee this side of the inquiry will receive full attention. Professor Eurich, as bacteriologist to the Bradford Anthrax Investigation Board and specialist medical referee to the Home Office for anthrax, has identified himself with the subject under investigation; while Dr. Legge, as one of His Majesty's medical inspectors of factories, has exceptional experience of industrial diseases, and chose as the subject of his Milroy lecture before the Royal College of Physicians of London, in 1905, Industrial Anthrax and Serum Treatment. The secretary to the committee is Mr. G. E. Duckering, of the Home Office, and communications relating to the subject of the inquiry may be addressed to him at 72, Bridge-street, Manchester.

LARGE AMOUNT OF UREA IN THE PERICARDIAL EFFUSION IN BRIGHT'S DISEASE.

THOUGH pericarditis is a well-recognised complication of Bright's disease, the connexion between the two is still disputed. Some writers attribute the pericarditis to toxæmia; others to a superadded infection, usually to a pneumococcic one. In a recent thesis M. André Weill has given the results of the examination of 11 cases. In 2 there was less than 2 grammes of urea in the pericardial fluid, in 6 there were between 2 and 3 grammes, and in 3 more than 3 grammes. Bacteriological examination gave the following results. In 4 cases it was negative; in 2 colonies of the colon bacillus were obtained but the organism was not agglutinated by serum obtained from the patient during life—evidently the infection was agonal; in 1 case there was found a streptococcus and in 4 cases the pneumococcus. At a meeting of the Société Médicale des Hôpitaux of Paris on Oct. 24th M. E. de Massary and M. P. Chatelin reported the following case. A woman, aged 33 years, was admitted into hospital on March 3rd, 1913, complaining of general weakness, cramps in the lower limbs for two months, and dyspnœa. She said she had never previously been ill and had five healthy children. However, two premature labours occurred in 1912, the second at three months on Dec. 27th. Since the end of October she felt fatigued and suffered from pains in the calves and thighs and lost appetite. The miscarriage accentuated this condition. In January, 1913, the legs became a little swollen and the urine was examined and found to contain a large quantity of albumin. She was put on a milk diet but she did not improve, vomiting occurred four or five times a week, and she lost flesh. On examination she was thin, sallow, and pale. The respiration was shallow and irregular (20 to 22 per minute). There was a little œdema, localised exclusively behind the malleoli. The liver was enlarged, and there was a history of alcoholism. At the outer base of the left lung there was slight dulness and crepitation was heard. Some thick mucus was expectorated. The cardiac dulness was enlarged transversely and the apex beat was in the seventh space. A little above it a thrill was felt. At two foci—in the fourth and fifth left intercostal spaces and in the second left intercostal space—marked friction was heard in the form of a rough double sound, which was not transmitted to other parts of the chest and did not exactly coincide with the cardiac pulsations. The pulse was 100, strong, and a little irregular. The urine contained 8·64 grammes of urea and 6·25 grammes of albumin per litre; 500 grammes were passed daily. The arterial tension was 22/14 with Pachon's instrument. The blood serum contained 4·2 grammes

of urea per litre. From March 11th to 15th the amount of urine in the 24 hours fell to 300–350 grammes, and the patient vomited and could retain nothing on her stomach. Exploratory puncture at the left base yielded serous fluid. She became somnolent and at times the right eye showed external strabismus. The breath developed an ammoniacal odour. The pericardial friction diminished, but the dulness remained about the same. On March 22nd general convulsions occurred, lasting 10 minutes, during which urine escaped. In the evening she became comatose. Death occurred on the following morning. Soon afterwards 40 to 50 grammes of hæmorrhagic fluid were withdrawn with antiseptic precautions from the pericardium. It contained numerous red corpuscles, some white ones, and patches of desquamated cells. Examination of a film obtained after centrifuging and staining with phenolised thionin did not show any microbes. Also a culture on the serum of the rabbit was negative, as was also inoculation of a mouse. The pericardial fluid contained 6·4 grammes of urea per litre. At the necropsy 90 grammes of hæmorrhagic fluid was found in the pericardium, on which there was a fibrinous deposit. The kidneys were granular and much atrophied; the right weighed 80 and the left 40 grammes. The liver weighed 1300 grammes and was soft and fatty. The lungs were œdematous, and at the left base the tissue was a little more dense and was congested. Sections of the pericardium were examined microscopically for microbes without result. Evidently the pericarditis was due to retention of urea in the system and its accumulation in the pericardium.

ACUTE TYPHLITIS.

SINCE the discovery of appendicitis the term typhlitis has almost disappeared from medical literature, and it is generally held that the cases described by the older writers under this designation were examples of appendicitis. That they were not entirely wrong is shown by the following case of primary acute typhlitis reported in the *Australian Medical Journal* of Sept. 27th by Dr. Geoffrey Owen, who also refers to a very similar case previously recorded in the same journal. He was urgently summoned to a woman, aged 25 years, who had been well till two days previously, when she was seized with abdominal pain and vomiting. At first the pain was referred to the middle of the abdomen, but after 24 hours it became localised in the right lower quadrant. At the end of 12 hours the vomiting ceased. There was no history of previous illness except slight anæmia. On examination she did not look ill. The temperature was 99·2° F., the pulse 88, and the tongue clean. Abdominal respiration was good, but there were definite tenderness and rigidity in the right lower abdomen. The bowels had acted after the administration of castor oil. Acute appendicitis was diagnosed, and though there were no urgent symptoms an operation was advised and was performed next morning. Slightly turbid fluid was found in the peritoneal cavity. Immediately under the peritoneum a mass of omentum was encountered, and on attempting to unravel this it was found to be intimately connected with the bowel and the incision had to be considerably enlarged to make out the condition. The cæcum and part of the ascending colon were found surrounded with omentum, which was glued to them by recent delicate adhesions. The condition of the bowel was remarkable. The cæcum was studded all over with injected vessels, which extended well up the ascending colon. The appendix lay tucked behind the cæcum and was not nearly so injected as the colon. It presented no other sign of disease. The omentum which was wrapped round the large bowel also presented the same curious appearance of acute injection, and in addition was very friable, tearing on the least touch to separate the adhesions. Its terminal part formed œdematous masses. This looked so rotten that it was deemed advisable to ligature off and remove several large pieces. The appendix was removed in the usual manner. Recovery was uneventful. Dr. Owen concludes that the case was one of primary acute typhlitis in which the appendix was only involved in the general process and was not the primary seat of the disease.

MEDICAL TRANSPORT WITH NAVIES.

THE October number of the *Military Surgeon*, an interesting Chicago publication, is mainly filled with articles on the management of the wounded in naval actions. Director-General C. F. Stokes, of the United States Navy, has worked up a scheme which details a "medical transport," a ship of 10,000 tons or more, to each division of the fleet, a division including four battleships with destroyers and auxiliaries. After a battle the medical transport arrives and sends to each of its battleships, or to its destroyers, a section of its boats with a dozen medical officers and sick-berth stewards and four dozen sick-berth attendants. They all get on board the battleship of whatever sort it may be, give what additional attention is required to the wounded, and move these into the boats and take them to the medical transport for conveyance to the base. This scheme was obviously suggested by the field ambulances or bearer companies of the army. It is too elaborate to be of use at sea. In bad weather Director-General Stokes proposes to transfer wounded in cots along an aerial railway, sliding the cots on a wire hawser stretched from the stern of their ship to the bow of the medical transport. A similar method was tried in our navy for coaling ships at sea, but did not give satisfaction. The first essential for the satisfactory care of the wounded in a naval action—namely, that their fleet must be brought out victorious—is forgotten. Extemporised measures will secure a higher percentage of recoveries for the victors than the most elaborately prepared plans can hope to achieve for the vanquished. So it is a serious matter to propose to make arrangements to help the wounded which shall in any way hamper the fighting efficiency of their ship or squadron. Surgeon J. L. Pleadwell's paper on the Relationship of the Hospital Ship to the Fleet in Time of War is most instructive in this connexion. The problems of the medical officer in charge, although so tangled, are very clearly stated and resolved. This thoughtful article should be read by every naval medical officer. A similar remark applies to Captain Lazell's paper on Mental Hygiene, and the improvement of the rank and file in army and navy. The Association of Military Surgeons of the United States, including Army, Navy, and Public Health Services, held its annual meeting at Denver, Colorado, in September, under the presidency of (Fleet) Surgeon W. C. Braisted, United States Navy; and Surgeon-General W. H. Norman, representing the Royal Navy and

Royal Army Medical Services, received a hearty welcome.

A LANTERN lecture will be delivered before the Fellows of the Royal Society of Medicine, in the Robert Barnes Hall, 1, Wimpole-street, on Thursday, Nov. 20th, at 5 o'clock, entitled "The Leprosy Problem in the British Empire, illustrating the Clinical and Bacteriological Aspects of the Disease: with Remarks on the Clinical Aspects of Syphilis among Natives," by Dr. H. Bayon, Research Bacteriologist to the Government of the Union of South Africa.

MEDICINE AND THE LAW.

A Death Certificate Given by an Unqualified Person.

AT the recent Gloucester assizes a prisoner charged under the name of Jose Manuel de Freitas was indicted for having given a certificate of the cause of death not being a medical practitioner, for fraudulent conversion of money entrusted to him for the purchase of surgical instruments by the Cinderford and District Friendly and Medical Aid Association, and also for having obtained £37 by false pretences from the association. It was stated that the prisoner, who pleaded guilty, obtained the post of medical officer of the association mentioned by replying to an advertisement, and carried out his duties for three weeks without complaint from his patients. The association is not to be congratulated upon the success of its efforts to obtain a medical attendant for its members, and it would be interesting to know what steps it took to ascertain the qualifications of the man whom it engaged; for the prisoner, in addition to the fact of his not being a medical practitioner, although he bore, or had assumed, the surname of a gentleman on the Register, was given a very bad character by a detective from Scotland Yard. He was described as a man who lived by fraud and on the immoral earnings of women; he had defrauded a lady of over £1300 and a gentleman of £100, and had also carried on unqualified practice in several localities. He was sentenced by Mr. Justice Coleridge to 10 months' hard labour, which does not seem an excessive penalty.

An Attempt to Blackmail a Medical Man.

At the recent sessions of the Central Criminal Court a man named Gates, a picture framer, 21 years of age, was convicted and sentenced to three years' penal servitude upon an indictment charging him with sending to Dr. W. J. Bell a letter demanding money from him with menaces and without any reasonable or probable cause. The prosecutor, a medical man practising at Peckham, and being upon the panel under the Insurance Acts, attended a girl named Wright at his surgery, where he saw her on four occasions, and afterwards at her father's house, where she was in bed under his orders, and where he paid her six visits. This was before April 28th, after which date and before July 31st the patient paid 23 visits to the prosecutor's surgery. Early in August the prisoner had banns of marriage between himself and Wright published at a local church and fixed the marriage for August 25th. On August 12th a letter was received by Dr. Bell accusing him of improper conduct towards Wright, and threatening that an action claiming £2000 damages would be started unless a settlement by payment of £100 should be made. Dr. Bell wisely took the only right course with promptitude, communicating immediately with his solicitors, and the police arrested Gates and Wright. The latter pleaded guilty, and stated through counsel that she in fact wrote the letter, but that Gates was responsible for the whole of its contents, that there was not a particle of truth in the allegations made in it, but that every suggestion in it came from Gates who had coerced her into copying the document. She was bound over to come up for judgment when called upon. Dr. Bell is to be congratulated upon the conclusion of an episode which must have been a very painful one to him, and upon the successful and complete repudiation of an odious charge which exemplifies the dangers to which the medical practitioner is frequently exposed in the exercise of his profession. It may be mentioned that in his opening speech, after describing the number of attendances required by the illness of Wright (who had suffered from rheumatism), Mr. Bodkin, who appeared for the prosecution, called attention to the thoroughness of the treatment accorded to her under the Insurance Acts.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Treatment of Tuberculosis.

FOR four hours on Nov. 4th the Council debated the Public Health Committee's reports which appeared in THE LANCET of Oct. 25th, p. 1205, and Nov. 8th, p. 1332, with regard to provision for uninsured persons suffering from tuberculosis. Discussion first took place with regard to the recommendation, already published in full, as to the financial basis of the provision for treatment of uninsured persons.

After some debate on the general question, in the course of which it was pointed out that the formulation of a comprehensive scheme for London had been under consideration by the Council ever since the Insurance Act was passed in December, 1911, the following motion was proposed by Mr. RAWSON:—

That the recommendation be referred back to the committee with instructions to ascertain whether the metropolitan borough councils desire local dispensaries to be under the sole control of the borough councils or the London County Council.

An amendment that steps be taken to arrange another conference with the Local Government Board was lost by 45 votes to 32, and the original motion was then put to the vote and defeated.

Dispensary Provision for Uninsured Persons.

Mr. A. L. LEON moved an amendment to the Public Health Committee's recommendation in the following terms:—

That the Council, whilst regretting that a scheme has not been made earlier, is of opinion that no scheme for the treatment of tuberculosis in London can be comprehensive or satisfactory while the Council is prevented from dealing with the provision of dispensaries by the premature action of the Local Government Board in approving partial and local schemes in London, and that the Board be asked to cancel all consents given for the erection of dispensaries, and to make an Order enabling the Council itself to provide and administer (itself or through borough councils) all dispensaries required, one-half of the expense to be defrayed out of the county fund as expenditure incurred for general county purposes and one-half to be defrayed by the Government.

Mr. Leon advised the Council, since the Local

Government Board had taken a line which deprived the Council of authority, to wash its hands of dispensaries schemes and confine itself to the provision of sanatoriums. It was a matter for keen regret that the Local Government Board should have allowed a number of dispensaries to be started in different parts of the metropolis without regard to the needs of London as a whole. It would be impossible to coördinate and make available the highest medical skill and knowledge existing if the borough councils were to be the units for dealing with the tuberculosis question. The Public Health Committee had conferred with the authorities of 12 large hospitals; these bodies were very anxious to fall in with a scheme, but they made it an essential that the Council should be the one centralising authority for London. In some boroughs there were no hospitals, and there were cases where a borough council had refused to act with a hospital and *vice versâ*.

Mr. F. BRIANT, who seconded, said he did not wish to be unduly severe on the borough councils, but no more serious blow could be struck at a comprehensive policy than to leave hospitals out of a tuberculosis scheme. The hospitals with medical schools—in fact, the whole of the teaching hospitals—had passed a resolution in which they had emphasised the importance of the administration being in the hands of the London County Council. If the borough councils declined to have anything to do with the hospitals very unsatisfactory results would be obtained. Of 730 people treated at St. Thomas's Hospital dispensary 340 required special surgical treatment, and this was not available at an ordinary tuberculosis dispensary.

Mr. J. A. DAWES, M.P., Chairman of the London Insurance Committee, said that the time for moving the amendment had passed; six months ago it might have been acceptable. The Council ought to have been in possession of the views of the Local Government Board at a much earlier date; the Board had taken a most unfortunate line. Rather than have any more delay the Council had better pass this scheme and try to induce the borough councils to adopt some suitable measures for their respective areas. Nothing could be more unfortunate than to have 29 areas each in a ring fence, but that was what matters had come to. He did not think the hospitals made it an essential condition that the County Council should be the authority; they would try to make the best of a bad job. He did not like this scheme, but in the interests of tuberculous persons it should be adopted. The County Council was still the authority for residential purposes, and this might give it some power; the monetary control was just worth having.

Mr. O. E. WARBURG hoped that it would be possible to secure the coöperation of the hospitals, and that the County Council would be able to maintain a proper balance between dispensaries, hospitals, and local medical officers of health.

The amendment was lost by 34 votes to 20.

Financial Questions.

Debate then took place on the question of equalising the cost of tuberculosis treatment throughout the metropolis so that boroughs where the phthisis rate was high and was accompanied, as would usually be the case, by a low rateable value should receive financial assistance. Amendments to secure this were defeated by considerable majorities.

Mr. GILBERT JOHNSTONE moved an amendment that in view of the fact that the London Insurance Committee had resolved to make representations to the Treasury as to the inadequacy of the sums available for sanatorium benefit in respect of insured persons the Council was of the opinion that no comprehensive scheme could be carried out adequately unless provision were made for meeting the full cost of the treatment of insured persons out of the Insurance Fund or by the Government.

Mr. DAWES pointed out that the only deficit as to which the Insurance Committee made representations was in respect of residential treatment, and the shortage was due to the fact that the British Medical Association had been able to secure the allocation of 6*d.* per head to the doctors for domiciliary treatment. There were sufficient funds to provide for dispensary treatment.

The amendment was carried by 42 votes to 22.

The recommendation as amended was then agreed to in the following form:—

That any comprehensive scheme for dealing with the treatment of tuberculosis in London shall provide for a contribution being made by the Council from year to year towards so much of the cost of the dispensary treatment of uninsured persons in the City of London and each metropolitan borough as would otherwise fall on the local rate, after taking into account the promised grant from the Imperial exchequer, provided that such contribution (1) shall not exceed 50 per cent. of such cost; (2) shall be made in the first instance from a date to be fixed hereafter by the Council; and (3) shall be conditional upon the Council being satisfied with the local scheme in force in such area and upon the arrangements and the expenditure being annually submitted to and approved by the Council. Whilst by the above proposals ample funds will be provided to meet the cost of dispensary treatment for uninsured persons, in view of the fact that the London Insurance Committee has resolved that representations shall be made to the Treasury as to the inadequacy of the sums available for defraying the expenses of sanatorium benefit in respect of insured persons suffering from tuberculosis in the county of London, the Council is of opinion that no comprehensive scheme can be carried out adequately unless provision is made for meeting the full cost of the treatment of insured persons out of the Insurance Fund or by the Government.

Residential Accommodation for Uninsured Persons.

On the report of the Public Health Committee with regard to residential accommodation for uninsured persons and its recommendation that the Council should make arrangements with the Metropolitan Asylums Board, with hospitals and with sanatoriums without the Council owning or managing institutions (see THE LANCET, Nov. 8th, p. 1332).

Major LEVITA moved an amendment to the effect that the Council should not act as a financial intermediary, but should leave it to local health authorities, the Asylums Board, and other bodies to deal with tuberculosis. He criticised the proposed arrangements on the ground that at every stage of the disease except one the borough councils were to deal with tuberculosis; the County Council which had lost control of the scheme as a whole was to come in and deal with one small section of the problem. It would be irritating to the hospitals to find that as long as a man went to a dispensary he was under one set of authorities, but when the disease needed sanatorium treatment he came under another set of authorities. He did not know that the borough councils, which were the proper authorities to deal with health matters, had asked the County Council to make arrangements for residential treatment. It was estimated that 400 beds were required for uninsured persons; the

hospitals were not full, and he was not sure that existing institutions could not deal with residential treatment now that the Council at the request of the Insurance Committee had provided for insured persons.

The amendment was lost, only five voting in favour.

The debate continued on the main question on the line that the County Council should not delegate to the Asylums Board the provision of accommodation. Mr. DAWES said that although the Asylums Board had done its best to help the Insurance Committee out of a serious difficulty, the institutions it had provided were not entirely suitable, because it had none of the smaller sanatoriums required. As a matter of fact, the Asylums Board had no more institutions suitable for dealing with tuberculosis than had the County Council.

The committee's recommendation was then agreed to.

The Mount Vernon Hospital, Hampstead.

In regard to the views of the London Insurance Committee and of the Public Health Committee as to the acquisition of this institution (see last issue, p. 1333), Mr. L. COURTAULD, a medical member of the Council, moved an amendment to omit an expression of opinion in favour of the purchase of the institution or a communication to the Asylums Board on the subject so that the motion would read:—

That the Council is not prepared to purchase the Mount Vernon Hospital, Hampstead.

Mr. Courtauld said the institution was not suitable for any other purpose than hospital treatment of tuberculosis, and it would be unwise, if not impossible, for the Council to enter upon the conduct of a hospital. The institution was unsuited for a sanatorium because it had only 2½ acres of ground and so did not provide opportunities for graduated exercise and labour. It would be too miserable and depressing a place to be used as a home for advanced cases; these should be put in small cottage hospitals rather than in a big institution in which it would be difficult to persuade them to stay. As to the use of Mount Vernon for hospital cases, this would be undesirable because when things had settled down it would probably be found that there was sufficient provision in London for hospital patients. There were vacancies for male patients in the wards of Brompton Hospital, a thing that had not happened for a very long time. The majority of the large teaching hospitals were willing and even anxious to extend the accommodation in their wards for hospital cases. They feared losing material for teaching. The hospitals were the obvious places to which these cases should go, and it was not incumbent on the County Council either to acquire or advise any other body to acquire such an institution as Mount Vernon for the reception of hospital patients. These were difficult and complicated cases requiring special forms of diagnosis and treatment such as could not be obtained in the ordinary sanatorium but only in the large special fully equipped hospitals. It was one thing for the Council to manage a sanatorium which only required a medical superintendent and one or two assistants, but quite another thing to run a special hospital requiring a specialist staff and a large specialist organisation which the Council would have very great difficulty in bringing together, at any rate until municipalisation or nationalisation of hospitals was very much nearer.

Mr. DAWES said that the London Insurance Committee was favoured by having seven medical members who unanimously urged on a deputation to the Public Health Committee that Mount Vernon should be retained as a hospital to accommodate certain classes of cases. With all respect, their opinion should carry more weight than the single opinion of Mr. Courtauld. That large and influential body of medical opinion was very strongly in favour of the acquisition of Mount Vernon. This was one of the four specialist hospitals of London and if it were closed there would be a shortage of accommodation. The Insurance Committee thought this building would be specially valuable because it would be easy for friends to visit patients there.

The amendment was carried by 52 votes to 30, and the recommendation of the Public Health Committee as amended was then approved.

Administration of the Mental Deficiency Act.

The Council debated at considerable length a proposal by the General Purposes Committee that for the purpose of administering the Mental Deficiency Act, 1913, the Asylums Committee be abolished as a statutory committee, and that a new committee be appointed to coördinate the asylums work and the care of the mentally defective under one administration. Persons having special knowledge and experience of the care of defectives would be coöpted, and the Council would have direct control of expenditure, which it has not at present in the case of the Asylums Committee. Members of the Asylums Committee, without distinction of party, protested against the proposal. Several amendments aiming at postponement having been rejected the Council decided by 69 votes to 48 to proceed with the scheme.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Coventry.—The annual reports of medical officers of health are often used to express the individual views of their authors on administrative and scientific questions relating to public health, and this feature adds much value to an annual report. It is, however, sometimes prudent to recollect that these reports are made in the first instance for the guidance of local administrative bodies, the members of which may take statements of opinion without the reservations which those with technical knowledge would naturally apply. We are led to these observations by perusal of the pages of Dr. E. H. Snell's report for 1912 which discuss hospital provision for cases of infectious disease. We meet there the statement in regard to small-pox "that by experience we have learnt that small-pox is, *par excellence*, the disease which can be entirely controlled by isolation and disinfection." Dr. Snell presumably takes vaccination for granted when he makes no mention of it, but it would be better to explain to the layman that the truth of his proposition rests on the necessity of protection by vaccination, or by previous small-pox, of the staff of the hospital, the disinfecting staff, and the contacts of the patient. On the other hand, in referring to plague, Dr. Snell states that "the mere isolation of the patient and disinfection of premises can only be a secondary means of combating infection; the extermination of the rat is the real desideratum." This is an arguable opinion, but when human plague has been introduced into this country, as has now happened on several occasions, it has not necessarily been rat-borne, and in the suppression of human plague, should it occur in an English city like Coventry, primary reliance ought to be placed on isolation of the human case and not on attempts to destroy rats. The portion of the report to which we refer sets out with some force objections

to "older empirical methods" of isolation and disinfection, and represents that in view of recent research their use must be directed by an intelligent knowledge of individual diseases. This unimpeachable proposition has always lain at the root of epidemiology, a science which is not quite as new as might be inferred from the context of the report. In consequence of the occurrence of some serious cases of ophthalmia neonatorum in Coventry, Dr. Snell, after consultation with Dr. T. Harrison Butler, now endeavours to secure that newly born children, whether they show signs of eye inflammation or not, should have their eyes treated with a 5 per cent. solution of protargol. All practising midwives have been circularised on the subject, and informed that the solution can be obtained from any chemist at a cost of a few pence per ounce. Dr. Snell has reason to think that most of the midwives now adopt this procedure.

Metropolitan Borough of Poplar.—Mr. F. W. Alexander's report illustrates the great variety of useful public work done by his department in this large area of Eastern London. In Poplar great use is made, for disinfecting purposes, of "electrolytic fluid" produced by the electrolysis of a saturated solution of magnesium chloride, to which salt and caustic soda have been added. The cost of production in Poplar is just under £2 per 1000 gallons, and the fluid is used for all ordinary purposes of fluid disinfection, including the cleansing of school premises, and, by a special contrivance, for the treatment of the water in the public swimming baths. The effective and cheap purification of swimming bath water is a most desirable practice. It is said to be adopted in Poplar not with the idea of rendering periodic changes of the water unnecessary, but to keep the bath water fresh and free from harmful organisms all the time it is in use.[1] Mr. Alexander claims, with the support of a committee on the purification of swimming baths which was appointed by the Royal Sanitary Institute, that by supplying one part of free chlorine to every 2 or 3 million parts of water, "not only is the water sterilised or deprived of all organised living molecules, but it is kept sweet and free from odour, and there is no tendency in the water to the deposition of slimy sediments on the floor of the pond." A certain amount of slimy matter collects on the water, but this is readily removed with a swab by the attendant. The "cleansing" of verminous persons is a matter which is often too little considered; there are few operations more useful, and it is satisfactory to find that the borough cleansing station was utilised for over 300 inmates of common lodging-houses in 1912. Some of these came from common lodging-houses outside the borough, the London County Council having arranged for a payment to the borough of 1s. per person in such cases. Mr. Alexander publishes a letter from the Local Government Board on the subject of notification of ophthalmia neonatorum, which makes it clear that the official recognition of this term is not limited to purulent ophthalmia caused by the gonococcus, but includes all cases of purulent eye discharge caused by other organisms, when these discharges occur during the first few days after birth. An important prosecution under Section 47 of the Public Health (London) Act took place during the year, which resulted in a decision which overruled a defence that a limited company is immune from prosecution for selling unsound food or exposing it for sale. The decision, however, was on other grounds given against the borough council, which brought the action, not against the retailer of unsound goods, who had surrendered them to the sanitary authority, but against the wholesale dealer from whom the unsound goods had been obtained. The borough council has made representations to the Local Government Board urging that the Public Health Acts should be amended so as to protect the public against the sale of unsound food by wholesale vendors.

Borough of Macclesfield.—In this industrial town, which has a population of about 35,000, and in 1912 a birth-rate of 20·1 per 1000, the rate of infantile mortality is usually high, and last year represented 115 per 1000 births. 37 per cent. of these infantile deaths were attributed to prematurity and congenital debility and defects, and Mr. J. H. Marsh states that the majority of the mothers of these infants had previously had abortions, miscarriages, or premature births, and that about half of them suffered from marked ill-health and poor physique. He considers that further reduction in the infantile mortality rate requires to be made by means of much greater future attention to ante-natal conditions, especially those of underfeeding and overwork. Cleanly surroundings of working-class homes, it is well known, have a marked effect on the epidemic diarrhœa of infants, and in this relation Mr. Marsh gives a useful caution against the conclusion that the replacement of outside privy-ashpits by water-closets is all that is required. The dry dust in such cases is often put into portable bins, with loose covers or none, which are left standing in the backyard, overfull and spilling their contents. Often scavengers cannot get on to the premises at the time of their regular visit, and thus the accumulations are increased. Mr. Marsh's demand that dustbins in the centre of the town should be emptied at least twice a week in the summer months and not less than once a week during the rest of the year seems in no way excessive. Although a high degree of fly prevalence is not necessarily accompanied by a high diarrhœal fatality, there are very strong grounds for associating the two occurrences, and high diarrhœa rates would hardly be surprising in the neighbourhood of some of the large uncovered middens of horse manure in the centre of the town, which Mr. Marsh describes as forming a prolific breeding-ground for these carriers of filth into the homes and food of the people.

[1] THE LANCET, March 15th, 1913, p. 770.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 8687 births and 4561 deaths were registered during the week ended Saturday, Nov. 8th. The annual rate of mortality in these towns, which had been 13·6, 13·1, and 13·9 per 1000 in the three preceding weeks, declined to 13 3 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 13 6 per 1000, which was equal to the rate recorded in London during the same period. Among the several towns the death-rate last week ranged from 4·8 in Gillingham, 6·8 in Oxford, 7·6 in Willesden, 7·7 in Newport (Mon.), and 7·9 in Aberdare, to 18·8 in Middlesbrough, 18·9 in Stockton-on-Tees, 20·1 in Great Yarmouth, 20·2 in Dudley, and 24·6 in Barnsley.

The 4561 deaths from all causes were 193 fewer than the number in the previous week, and included 435 which were referred to the principal epidemic diseases, against numbers declining from 925 to 509 in the four preceding weeks. Of these 435 deaths, 261 resulted from infantile diarrhœal diseases, 46 from whooping-cough, 46 from diphtheria, 34 from scarlet fever, 30 from measles, and 18 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3, against 1 6 and 1·5 per 1000 in the two preceding weeks. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had steadily decreased from 769 to 322 in the four preceding weeks, further declined to 261 last week; of this number 68 were registered in London, 16 in Manchester, 12 in Liverpool, 10 in Birmingham, 9 in Stoke-on-Trent, and 8 in Sheffield. The deaths referred to whooping-cough, which had been 32, 27, and 45 in the three preceding weeks, were 46 last week, and included 11 in London, 5 in Liverpool, 4 in Manchester, and 3 in Birmingham. The fatal cases of diphtheria, which had been 49, 38, and 51 in the three preceding weeks, fell to 46 last week; 5 deaths occurred in London, 4 in Leeds, 3 in Birmingham, and 2 each in Edmonton, Grimsby, Bolton, and Rhondda. The deaths attributed to scarlet fever, which had been 16, 24, and 24 in the three preceding weeks, further rose to 34 last week, and included 6 in Salford, 3 in Warrington, 3 in Sheffield, and 2 each in Birmingham, Liverpool, and Manchester. The deaths referred to measles, which had been 25, 27, and 49 in the three preceding weeks, declined to 30 last week; 6 deaths were registered in Liverpool, 3 in London, 3 in Stoke-on-Trent, 3 in Sheffield, and 2 each in Norwich, Birmingham, and Stockport. The fatal cases of enteric fever, which had been 20, 13, and 18 in the three preceding weeks, were again 18 last week, and included 3 in London,

3 in Wigan, and 2 each in Portsmouth, Bristol, and Rhondda. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily risen from 2112 to 3580 in the nine preceding weeks, had further increased to 3731 on Saturday last; 619 new cases were admitted during the week, against 575, 530, and 534 in the three preceding weeks. These hospitals also contained on Saturday last 1192 cases of diphtheria, 167 of whooping-cough, 80 of enteric fever, and 60 of measles, but not one of small-pox. The 1126 deaths from all causes in London were 104 fewer than the number in the previous week, and were equal to an annual death-rate of 13·0 per 1000. The deaths referred to diseases of the respiratory system, which had been 151, 178, and 207 in the three preceding weeks, slightly declined to 205 last week, and were 21 below the number recorded in the corresponding week of last year.

Of the 4561 deaths from all causes in the 96 towns, 176 were attributed to different forms of violence and 353 were the subject of coroners' inquests. The causes of 28, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Manchester, Sheffield, Leeds, Bristol, Bradford, Hull, and in 55 other smaller towns. Of the 28 uncertified causes of death, 7 were recorded in Birmingham, 2 in Grimsby, and 2 in Rhondda.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1034 births and 608 deaths were registered during the week ended Saturday, Nov. 8th. The annual rate of mortality in these towns, which had been 13 9, 14·0, and 14·7 per 1000 in the three preceding weeks, declined to 14·0 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 14·3, against 13·6 per 1000 in the 96 large English towns. Among the several Scotch towns the death-rate last week ranged from 5·4 in Hamilton, 6·0 in Kilmarnock, and 6·1 in Clydebank, to 15·3 in Edinburgh, 15·6 in Coatbridge, and 17·9 in Dundee.

The 608 deaths from all causes were 27 fewer than the number in the previous week, and included 55 which were referred to the principal epidemic diseases, against 62 and 82 in the two preceding weeks. Of these 55 deaths, 19 resulted from infantile diarrhœal diseases, 11 from measles, 11 from diphtheria, 10 from scarlet fever, and 4 from whooping-cough, but not one from enteric fever or from small-pox. These 55 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·3 per 1000, which coincided with the rate in the 96 large English towns. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 29, 19, and 34 in the three preceding weeks, declined to 19 last week; of this number 11 were registered in Glasgow and 4 in Edinburgh. The deaths referred to measles, which had been 14, 12, and 17 in the three preceding weeks, fell to 11 last week, of which 5 were recorded in Glasgow and 2 in Edinburgh. The fatal cases of diphtheria, which had been 8, 11, and 11 in the three preceding weeks, were again 11 last week, and comprised 5 in Glasgow, 3 in Aberdeen, 2 in Greenock, and 1 in Dundee. The deaths attributed to scarlet fever, which had been 13, 11, and 14 in the three preceding weeks, declined to 10 last week, of which 4 occurred in Glasgow. The 4 deaths referred to whooping-cough were slightly below the average in the earlier weeks of the quarter.

The deaths referred to diseases of the respiratory system, which had been 80, 92, and 99 in the three preceding weeks, declined to 84 in the week under notice; 29 deaths were attributed to different forms of violence, against 18 and 32 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of this year, 595 births and 404 deaths were registered during the week ended Saturday, Nov. 8th. The annual rate of mortality in these towns, which had been 16·0, 17·8, and 17·2 per 1000 in the three preceding weeks, rose to 17·6 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 17·3 per 1000; in the 96 large English towns the corresponding rate did not exceed 13·6, while in the 16 Scotch towns it was equal to 14·3 per 1000. The annual death-rate last week was equal to 19·4 in Dublin (against 13·0 in London and 14·6 in Glasgow), 17·5 in Belfast, 18·4 in Cork, 21·6 in Londonderry, 21·7 in Limerick, and 20·9 in Waterford, while in the 21 remaining smaller towns the mean death-rate did not exceed 12·0 per 1000.

The 404 deaths from all causes were 9 in excess of the number in the previous week, and included 34 which were referred to the principal epidemic diseases, against numbers steadily declining from 132 to 41 in the eight preceding weeks. Of these 34 deaths, 16 resulted from infantile diarrhœal diseases, 8 from scarlet fever, 5 from whooping-cough, 3 from measles, 1 from enteric fever, and 1 from diphtheria, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·5 per 1000, against 1·3 in the 96 large English towns and in the 16 Scotch towns. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had steadily decreased from 111 to 27 in the eight preceding weeks, further declined to 16 last week, and included 7 in Dublin, 3 in Belfast, and 2 in Kilkenny. The deaths referred to scarlet fever, which had been 4, 9, and 5 in the three preceding weeks, rose to 8 last week, and comprised 7 in Belfast and 1 in Dublin. Of the 5 fatal cases of whooping-cough, which were slightly in excess of the average in the earlier weeks of the quarter, 3 occurred in Galway. The 3 deaths attributed to measles were equal to the average in the three preceding weeks, and comprised 2 in Dublin and 1 in Londonderry. The death from enteric fever occurred in Belfast, and that from diphtheria in Dublin.

The deaths referred to diseases of the respiratory organs, which had been 48, 53, and 61 in the three preceding weeks, further rose to 69 in the week under notice. Of the 404 deaths from all causes, 127, or 31 per cent., occurred in public institutions, and 9 resulted from various forms of violence. The causes of 13, or 3·2 per cent., of the total deaths, were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death did not exceed 0·6 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeons: E. G. E. O'Leary to the *Invincible*; and H. Spicer to the *Indefatigable*. Surgeons: S. Punch to the *Indefatigable*; and E. Moxon-Browne to the *Tamar*, additional, for Hong-Kong Hospital, and to the *Triumph*, additional, for Hong-Kong Hospital, on the *Triumph* replacing the *Tamar*.

The undermentioned Acting Surgeons have been confirmed in the rank of Surgeon in His Majesty's Fleet:—Percy Lemprière Gibson (dated Oct. 4th, 1912), Arthur Martin Henry, George Foster Braithwaite Page, Alexander John Patterson, William Agar Scholefield Duck, Frederick Cecil Wright, Bernard Edward Patrick Sayers, David Greig Arthur, Alexander Simpson, Henry Ellis Yeo White, Michael Meehan, Devonshire Penrose Hawkes Pearson, Ivor Stanley Gabe, and Arthur John Tozer (dated April 11th, 1913).

ROYAL ARMY MEDICAL CORPS.

Major Edmund P. Hewitt is placed temporarily on the half-pay list on account of ill-health (dated Nov. 7th, 1913).

Colonel J. Maher has relinquished charge of the Queen Alexandra Military Hospital and taken up duty in the Gibraltar Command as Assistant Director of Medical Services.

Lieutenant-Colonel J. J. Gerrard, senior medical officer in the Sierra Leone Protectorate, has arrived home for duty from West Africa. Lieutenant-Colonel H. N. Thompson, D.S.O., has been appointed to the Scottish Command. Lieutenant-Colonel C. C. Reilly has been appointed to hold charge of the Military Hospital at Colaba, Bombay. Lieutenant-Colonel J. W. Bullen has been appointed to the Northern Command for duty. Lieutenant-Colonel H. D. Rowan has been appointed to hold charge of the King George V. Military

Hospital at Arbor Hill, Dublin. Lieutenant-Colonel M. O'D. Braddell has been appointed to the Irish Command for a tour of duty. Lieutenant-Colonel G. S. McLoughlin, D.S.O., has been appointed to hold charge of the Military Hospital at Winchester.

Major A. D. Waring has taken up duty at the Military Hospital, Hilsea. Major W. Tibbits has embarked for a tour of service in India. Major A. W. A. Irwin has joined at Cork. Major J. C. B. Statham has arrived home for duty from the Sierra Leone Protectorate. Major D. J. Collins has been transferred from the Military Hospital at Poona Cantonment to Kirkee. Major G. B. Crisp has arrived in Hong-Kong for a tour of service. Major H. W. Long has taken up duty at the Military Hospital, Devonport. Major B. B. Burke has been appointed to the Military Hospital at Dover. Major H. L. W. Norrington has arrived home on leave of absence from the Military Hospital at Malta. Major E. A. Bourke has been appointed for duty at the Military Hospital, Pembroke Dock. Major N. J. C. Rutherford has been selected for appointment as Specialist Sanitary Officer to the Cork District. Major C. W. Reilly has been appointed to hold medical charge at Bodmin.

Captain J. T. McEntire has arrived home on leave of absence from the Sierra Leone Protectorate. Captain N. E. J. Harding has been appointed to the London District for a tour of duty. Captain L. A. A. Andrews has been transferred to the Northern Command from the Military Hospital at Cork. Captain W. G. Maydon has been selected for appointment as Adjutant to the Royal Army Medical Corps School of Instruction in the West Lancashire Division. An exchange on the roster for service abroad has been approved between Captain C. P. O'Brien-Butler and Captain H. L. Howell. Captain W. F. H. Vaughan has embarked for a tour of service in Malta. Captain C. M. Drew has arrived home on leave of absence from Cairo. Captain B. A. Odlum has been selected for appointment as Instructor in Medical Corps duties at the South African Medical College. Captain J. G. Bell has embarked for a tour of service in the Straits Settlements. Captain H. J. Crossley has been appointed to the Military Hospital at Meerut Cantonment. Captain W. R. O'Farrell has arrived home on leave of absence from the Military Hospital at Alexandria. Captain P. J. Hanafin has been transferred to the Military Hospital at Dublin from Rogerstown Camp. Captain H. M. J. Perry has been selected for appointment as Specialist in Bacteriology and Prevention of Disease at Devonport. Captain A. W. Bevis has joined at Belfast. Captain W. E. Marshall has arrived home on general leave of absence from the Military Hospital at Cairo. Captain T. S. Dudding has been placed under orders for a tour of duty in India. Captain H. W. Russell has embarked for a tour of service in India. Captain A. C. Osburn has taken up duty at the Royal Victoria Hospital, Netley. Captain C. T. Edmunds has been transferred from Fawley Court to Bulford Camp. Captain W. Mathieson has arrived home on general leave of absence from the Military Hospital at Pretoria. Captain F. C. Sampson has been selected for appointment as Specialist in Dermatology and Venereal Diseases. Captain M. J. Lochrin, Captain E. M. Middleton, and Captain A. W. Howlett have been placed on duty on board the transport ss. *Plassy*, which left Bombay for Southampton on Nov. 7th with time-expired troops. Captain A. S. Arthur has been appointed to the Military Hospital at Liverpool. Captain T. W. Stallybrass has arrived home on general leave of absence from the Military Hospital at Khartoum. Captain R. C. Hallowes has been appointed to the Military Hospital at Omagh. Captain W. J. E. Bell has joined the London District for a tour of duty. Captain E. C. Lang has been transferred from Maryborough Heath Camp to the Military Hospital at the Curragh. Captain T. C. C. Leslie has taken up duty at the Military Hospital, Cork. Captain R. E. Porter has been transferred from Poeghane Camp to the Military Hospital at Nenagh. Captain F. A. H. Clark has been appointed to hold charge of the Brigade Laboratory at Calcutta. Captain A. D. Fraser has been appointed to the Royal Victoria Hospital at Netley, on transfer from London. Captain P. M. J. Power has been appointed to the Military Hospital at Cosham. Captain A. M. Pollard has been appointed for duty to the Military Hospital at Colchester. Captain C. A. T. Cunningham has been appointed Specialist in Dermatology and Venereal Diseases to the Fifth (Mhow) Division of the Southern Army in India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel G. G. Giffard has taken up duty as Superintendent of the Government Maternity Hospital, Madras Presidency. Lieutenant-Colonel A. E. Berry has been granted general leave of absence home from India for one year. Lieutenant-Colonel H. E. Banatvala has been appointed to officiate as Inspector-General of Civil Hospitals and Prisons and Sanitary Commissioner in Assam, vice Colonel R. N. Campbell, C.B., C.I.E., who has arrived home on leave.

Major H. B. Foster has been appointed to officiate as Professor of Medical Jurisprudence at the Goverment Medical College, Calcutta, during the absence on leave of Major O. St. John Moses. Major A. E. J. Lister has been appointed Professor of Physiology on the staff of King George's Medical College at Lucknow. Major A. M. Jukes has been confirmed in his appointment as Deputy Sanitary Commissioner to the Burdwan and Presidency circles in Bengal. Major J. W. Grant has been granted privilege leave of absence by the Government of India. Major H. A. J. Gidney, civil surgeon at Naga, has been deputed to Delhi by the Assam Administration in connexion with the prevention of malarial fevers.

Captain A. J. V. Betts has been granted leave of absence on medical certificate. Captain F. P. Mackie has been appointed to the Bacteriological Department of the Government of India. Captain H. C. Keates has been granted leave of absence. The services of Captain M. J. Quirke have been placed permanently at the disposal of the Government of Madras for employment in the Sanitary Department. Captain R. E. Flowerdew has been appointed to hold substantive medical charge of the 99th Regiment of Deccan Infantry. Captain J. S. Fitzgerald has been selected for appointment in the Bombay Jail Service. The services of Captain W. S. McGillivray have been placed temporarily at the disposal of the Burmese Administration for employment on plague prevention duty. Captain N. M. Wilson has been granted leave of absence. The services of Captain S. J. Bathena have been replaced at the disposal of the Commander-in-Chief. Captain A. C. Ingram has taken up duty in Madras Presidency.

Lieutenant P. F. Gow has been selected for appointment as Specialist in the Prevention of Disease and placed in charge of the Bacteriological Research Laboratory at Brigade Headquarters, Allahabad. Lieutenant P. J. Veale has been granted eight months' general leave of absence home from India on medical certificate.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Thomas Lindsay to be Captain (dated Nov. 12th, 1913). Lieutenant George Rollason resigns his commission (dated Nov. 12th, 1913). Lieutenant Frederick L. Tulloch is confirmed in his rank.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Colonel William Coates, C.B., Territorial Force Reserve, is appointed to the Honorary Colonelcy of the Royal Army Medical Corps in the East Lancashire Territorial Division (dated Nov. 12th, 1913).

Colonel Joseph Whitfield Blandford, Retired List (late of the Army Medical Service), is appointed to the Honorary Colonelcy of the Royal Army Medical Corps in the Northumbrian Territorial Division, vice Honorary Colonel Sir George H. Philipson, Knight, who vacates the appointment (dated Nov. 11th, 1913).

6th London Field Ambulance, Royal Army Medical Corps: Lieutenant Frank Colman, from the 5th London Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated Oct. 13th, 1913).

3rd Lowland Field Ambulance, Royal Army Medical Corps: Captain James H. H. Pirie is seconded under the conditions of paragraph 112 of the Territorial Force Regulations, for service under the Colonial Office (dated Oct. 1st, 1913).

2nd London (City of London) General Hospital, Royal Army Medical Corps: Captain Henry P. Dean resigns his commission (dated Nov. 12th, 1913).

1st Western General Hospital, Royal Army Medical Corps: Lieutenant-Colonel Thomas H. Glynn resigns his commission (dated Nov. 12th, 1913). Major Sir Ronald Ross, K.C.B., to be Lieutenant-Colonel (dated Nov. 12th, 1913). Captain Peter Davidson to be Major (dated Nov. 12th, 1913). Captain

Arthur John Evans, from the 1st West Lancashire Field Ambulance, Royal Army Medical Corps, to be Captain, whose services will be available on mobilisation (dated Nov. 12th, 1913).

Attached to Units other than Medical Units.—Lieutenant James M. Kirkness to be Captain (dated August 1st, 1913). The undermentioned Lieutenants resign their commissions (dated Nov. 12th, 1913): Richard C. Roberts and Frederick G. Harper.

THE ROYAL AUTOMOBILE CLUB AS A HOSPITAL IN TIME OF WAR.

At a recent meeting of the committee of the Royal Automobile Club the following resolutions were adopted:—

1. That in the opinion of this committee it is desirable that in the event of war calling for the mobilisation of the Territorial Forces in this country, the Royal Automobile Club be handed over to the London County Territorial Association and other analogous bodies, to be a general hospital, and this committee pledges itself to do everything in its power to secure the carrying into effect of this resolution.
2. That the R.A.C. be No. 3 General Hospital, as that hospital is commanded by Dr. H. E. B. Bruce-Porter, a member of the committee of the club, who would therefore be in touch with the R.A.C. staff.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

In the November issue of the *Journal of the Royal Army Medical Corps* Colonel W. H. Horrocks returns to the subject of the variation of the bacillus typhosus. His present conclusions are that under certain conditions B. typhosus may be converted into B. fæcalis alkaligenes, but he is unable to afford any evidence as to the epidemiological significance of this variation. "The B. fæcalis alkaligenes appears to have no pathogenic effect on ordinary laboratory animals, and it has not been possible to reconvert this variant into the B. typhosus." The military great coat, which, by the way, we do not hear of being used in the British army until the reign of Elizabeth, is the subject of a very interesting article by Captain N. Dunbar Walker, who discusses the construction and use of this garment by the armies of Europe, of America, and of Japan. Dairies and Cowsheds, their Effect upon the Purity of the Milk Supplied to Military Hospitals, Troops, and Married Families, by Staff Sergeant E. B. Dewberry, R.A.M.C.; Kala-Azar in an Adult from Malta, by Fleet-Surgeon P. W. Bassett-Smith; a case of Death from Syphilis occurring Nine Days after Injection of Salvarsan, by Captain J. H. Duguid and Lieutenant W. T. Graham; and the Phylactic Use of Quinine, by Lieutenant-Colonel H. N. Thompson, are other matters dealt with in the present issue of the *Journal*. Students of military history will appreciate the excerpts from old records by Colonel R. H. Firth on Some Indian General Orders.

NAVAL MEDICAL CONSULTATIVE BOARD.

Surgeon-General John J. Dennis has been appointed a naval member of the Naval Medical Consultative Board in the place of Surgeon-General Howard Todd, C.B., K.H.S., retired. Sir John Tweedy has been appointed a civilian member of the Board.

MIDDLESEX COUNTY COUNCIL AND THE TREATMENT OF TUBERCULOSIS.—It was reported at the last meeting of the Middlesex county council that a number of applications had been received from non-insured persons suffering from tuberculosis for institutional treatment. Hitherto sanatorium treatment had been limited to insured persons, but the public health committee stated that sufficient progress had now been made for it to be possible to begin the treatment of non-insured persons. Seeing that insured persons contributed towards the cost of sanatorium benefit it would only be equitable that a contribution towards the cost should be made by non-insured patients, the amount being considered in each case on the merits. The council passed the following resolutions:—

That where the council think it advisable the treatment of non-insured persons suffering from tuberculosis be undertaken at hospitals, sanatoriums, and dispensaries by the county council upon the basis of a contribution being made, where possible, by the patient towards the cost of maintenance or treatment.

That institutional treatment be undertaken only so far as accommodation is available at any of the hospitals or sanatoriums under the control of the county council, or to which it has agreed to send patients.

That the public health committee be authorised to sanction the above treatment and to settle the amount of the contribution, if any, in each individual case.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

A Stand-to-Stand Visit of Inspection at the Olympia Exhibition.

WITH over 300 exhibits, the doctor in search of a car will feel confused unless he relies rigidly upon one factor in his choice—namely, the price which he will give. Generally speaking, there are two classes of doctors who need motors. There is the town and country specialist, to whom price is of little importance, and who will find in either a Rolls-Royce, a Delaunay-Belleville, an Armstrong-Whitworth, a Wolseley, a Lanchester, a Renault, a Sunbeam, a Vauxhall, a Fiat, a Minerva, a Napier, or a Clement-Talbot a car that will fulfil all his wants. Any of these are sure to give satisfaction, the price varying from about £1200 or £1300 for a Rolls-Royce to about half, or less than half, of that amount for some of the cheaper makes. The other class is the general and country practitioner, and the question of expense with the major part of them has to be considered. This class can probably be again divided into two — those who merely want a two-seater for their professional work, and those who would like a car which they could also use for week-end or other holidays with their families. If it is a matter of expense, it should be borne in mind that the light two-seater is much cheaper, not only to buy, but also in running cost and upkeep.

Messrs. Alldays and Onions show their two- and four-cylinder models. Their new four-cylinder 10 h.p. is a model of sound engineering, and one worthy of the doctor's consideration. The brake adjustment is by means of thumb-screws in very accessible positions, and the body provides plenty of room for the occupants. The 10 h.p. Midget has a two-cylinder engine, and makes an excellent light two-seater.

Messrs. Argylls, Limited, show on Stand No. 73 their 12–18 h.p. poppet valve and samples of their later models of sleeve Argyll engines. Their coachwork as well as their chassis is bound to attract great attention.

The Ariel and General Repairs, Limited, show the Hurtu 10 and 14 h.p. cars, both with four cylinders. Little alteration has been made to their last year's model, except that now the gearbox gives four forward speeds, and provision has been made at the foot of the engine for fixing a dynamo for lighting purposes.

Messrs. Bayard show a two-seater torpedo fitted with a four-cylinder 60 mm. × 120 mm. engine. The polished mahogany covering for the petrol tank and one-man type hood make the model very attractive.

Messrs. F. S. Bennett, Limited, show on Stand No. 108 the new Cadillac motor. This is certainly replete with novelties; these include two direct drives by means of two pairs of bevel gears, either for working alternatively or giving the car two different gear ratios. An electric starter is also fitted, and the gears are changed by means of an electric control.

Briton Motors Company, Limited, show their two-seater, fully equipped with a 68 mm. × 120 mm. four-cylinder engine, which has been previously described in these Notes, and should certainly be inspected by the doctor in search of a car at less than £200. The price is 175 guineas for a two-seater and £200 with a four-seated streamline body.

The exhibit of the Darracq Company has always been of interest. This year the great attraction is their 12 h.p. and 16 h.p. car, designed by Mr. Owen Clegg. Both are full of new features. The chassis cannot claim all the improvements, for the coachwork fitted shows a very marked advance both in design and workmanship, and it is pleasing to note that this also is produced in the Darracq factory at Fulham. The 12 h.p. is shown as a torpedo and limousine landaulette. There will be a large sale of this high-class model.

The models of the De Dion Bouton Company are to be seen on Stand No. 74, the most noticeable feature being the

introduction of a small four-cylinder model in place of the twin-cylindered model used for so many years past. This new 8–10 h.p. chassis has a four-cylindered 56–120 mm. monobloc engine, and is supplied as either a two-, three-, or four-seated car. It has a chain-driven single camshaft, chain drive to magneto and oil pump, and thermo-syphon cooling, assisted by a fan mounted on an adjustable bracket. The valves are enclosed, the carburetter is the De Dion-Zenith, and the magneto is a Bosch. The price for chassis, tyres, and tool kit is £221. Other models are also shown.

The Hillman Motor Company show four types of their new 9 h.p. car, fitted either as a two-seater with hood, &c., or as a two-seater coupé, which would make a very useful car for professional use.

Messrs. Metallurgique, Limited, are on Stand 99. Their 15–20 h.p. is an improved edition of their 1913 type. A special platform is arranged for an electric light dynamo, and, as is now so universal, the valve gear is driven by a silent chain.

Messrs. Morgan and Co. exhibit on Stand No. 80 three entirely new Adler models. There is a 9 h.p. with a four-cylinder monobloc engine 65 × 98 mm., complete with Morgan two-seated body, also a chassis of the same type. They also manufacture a tandem two-seater on this chassis, and it is essentially one that should be considered by all in search of a light two-seater. The 11–16 h.p. chassis has a four-cylinder engine 67 × 110 mm., cast in pairs, fitted with the latest design Morgan coupé-landaulette body, and the 20–30 h.p. chassis has a four-cylinder engine 86 × 135 mm., equipped with the "Morgan" new patent cabrio-landaulette body. The popular 14–18 h.p. model, fitted with the latest design "Morgan" torpedo body, is also shown.

Messrs. W. R. Motors, Limited, show the Morris-Oxford Light Car, which has a White and Poppe engine and carburetter, and all the brakes are on the back axle. Three-quarter elliptic springs are fitted, so the riding should be most comfortable. The price for a two-seater model de luxe is 190 guineas, complete with Sankey detachable wheels, but the ordinary type is listed at £180. This little two-seater is especially worth close inspection.

The cars of the Rover Company, Limited, have always appealed to doctors, and their exhibit of their 12 h.p. models, with different type bodies, should certainly attract attention. There is little alteration in their 1914 cars, except that the wheel-base has been increased and a dynamo lighting outfit is supplied as a standard equipment.

The Sunbeam Company show on Stand 101 some very good examples of their 12–16 and 16–20 chassis. There are no changes to record in the main design of this car, last year's models having given such universal satisfaction.

The Swift Company, on Stand 42, show samples of their 11·9 and 15·9 cars. The former as a two-seater is sold at £285, and the latter with a streamline body, including a dynamo electric lighting set, is £385. Both of these cars are certainly worthy of close attention by those who can run to these prices.

Clement Talbot, Limited, show four cars. Their 12 h.p., which sells at £410 complete, is the one most likely to appeal to doctors.

The Vulcan Motor and Engineering Co., Limited, have made practically no changes in their 10 h.p. engine, but their 15 h.p. model has a new monobloc engine. A good many doctors have had these cars and have reported most favourably concerning them.

The stands of the Belsize Company and of the Star Engineering Company should be visited, as both make cars eminently suitable for medical men.

Tyre exhibits are always interesting, and the points which seem to have advanced are the greater use of bolt-plate valves and detachable rims and wheels.

The Warland detachable rim, which is used on a good many cars, including the De Dion, certainly seems a favourite, and is to be recommended. All the tyre manufacturers are well represented in the gallery—the Dunlop, the Continental, the Michelin, the Palmer, the Stepney Spare Motor Wheel, Limited, and the Wood-Milne, Limited. The two latter have exceedingly satisfactory all-rubber non-skids, and the manufacturers named produce goods that can certainly be relied upon.

From tyres it is but a step to tyre-repairing appliances, and those of Messrs. Harvey Frost and Co., Limited, create genuine interest on account of the new models and the important additions to existing models.

Messrs. H. M. Hobson, Limited, show a full range of sparking plugs. This year they have brought forward a new type of plug, which is shown at Olympia for the first time, and will be on sale on and after December 1st. The special purpose of this plug is to do away with the wear of the electrodes due to the action of the voltaic arc when the engine is running. This voltaic arc volatilises the molecules of the electrodes, and in consequence the distance between the sparking points widens, and renders easy starting, or starting at all, impossible. Similarly, the electrode may melt and the spark lose its energy, or surplus oil sticking on the electrodes may cause other troubles. The new arrangement of the patent expanding electrode does away with these troubles. The insulated centre stalk is made in its whole length of two metals, riveted and soldered together, but with different co-efficients of expansion. Owing to its varying expansion this centre stalk bends more and more as the heat increases, hence it can be easily understood that this electrode, when brought nearer to the electrode attached to the body of the plug, facilitates the starting of the engine, as the spark jumps across easily. Then, as the speed of the engine increases, the patent electrode gets hotter and hotter, and consequently bends farther away from the electrode on the body of the plug, and this wider gap causes the spark to give out its maximum heat and power at all speeds of the engine.

Messrs. Brown Bros., Limited, have an interesting range of motor accessories, such as the Brolt electric lighting installation, the autoclipse lamps made for either acetylene or electricity, the popular Gabriel horn, the shock absorber which was described previously in these Notes, as well as the Sampson plug for repairing punctures, which was also recently fully described. A great many owners like to do a good bit of repairing work themselves, and for those who care to remove the carbon deposit from their cylinders, instead of having it burnt out, the "Success" carbon-removing tools will appeal. They enable the cylinder head and piston to be thoroughly scraped as well as the edges of the parts. After the carbon has been scraped the deposit can be blown into the valve chambers by a tyre pump, whence it can be spooned up by means of the special tools provided.

Speedometers are accessories which, though not necessary, are certainly very much in favour. Messrs. Stewart have always produced a reasonable and popular one, and their 1914 models have certainly an advantage over the older ones, as provision is made for lubrication of the wheel-driven bevels, which in the older days occasionally gave trouble through wear. Messrs. S. Smith and Son and Messrs. Markt and Co. also show excellent speedometers, which are sure to give satisfaction.

Some who have to travel in all weathers may be attracted by the Thompson-Bennett exhaust car heater. This firm also show the warning-tone horn, which is merely worked by a small hand plunger, without the use either of a mechanical driver or of electricity.

Electric car lighting has now become almost a necessity, especially for doctors. Of course, accumulators can be used and will supply sufficient current for ordinary side and head lights, but they have to be kept charged, and occasionally they may get run down and cause anxiety as to whether the light will last for the return home journey. This, of course, should not occur if they are kept charged, but all this worry can be avoided by an electric light installation driven off the engine.

The Imperial Motor Industries, the Motor Accessories Company, Messrs. S. Smith and Sons, the Rotax Motors Accessories Company, Messrs. Peto and Radford, the Mira Magnetolite, and Messrs. C. A. Vandervell and Co. all show exceedingly neat dynamos and fittings for car lighting. That shown on the stand of the Imperial Motor Industries is of exceptional interest, as it also combines a self-starter. The question whether a high voltage or low voltage is preferable is greatly a matter of taste. The writer rather inclines to a low voltage, and one point which he thinks should be insisted upon is that the dynamo can easily be disconnected when not required for accumulator charging or lighting.

The Atlas Inner Case Syndicate show a useful petrol filler, which is also a strainer, as well as their impulse pump,

which latter is certainly of value, and was fully described some time ago in these Notes.

The Scott's Starter Syndicate, Limited, also show an efficient electric starter and lighting generator.

The general impression of the exhibition is that it is very much like its predecessors, except that there are more exhibits. Leather-faced cone clutches are as popular as ever, for which I think the doctor should be grateful, as they are satisfactory, and even if the leather does wear it can easily be replaced. Four-speed gear boxes are ousting the three-speed, and smaller engines are more universal. The exhibition is certainly like a good pudding—it has plenty of plums in it, and there is now much more likelihood of a purchaser drawing a plum than there was in the past.

Any of the cars mentioned above can, in the writer's opinion, be safely bought by doctors with almost a certainty of good and efficient service, provided the purchaser, either personally or by his chauffeur, takes care of his car.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Cremation in Manchester.

FROM the annual report of the Manchester crematorium we learn that the cremations last year reached 159, the numbers for the four previous years being 117, 110, 113, and 147. The number of visitors paying for admission to see the crematorium (1667) also showed an increase. The numbers present at cremation funerals reached 5330. The directors state that attendance at cremation funerals is largely effective in removing prejudice against cremation. There are 13 crematoria in the kingdom, and only one, that at Golder's Green, had more cremations last year than the Manchester crematorium. After defraying all expenses there is a surplus of £418, while the accumulated surplus amounts to £634, and the reserve account stands at £800.

Burnley Victoria Hospital.

Mr. Edward Green has intimated to the Burnley Victoria Hospital authorities that his wife and her sister, Mrs. Greenhalgh, will contribute £1000 for a cot to be placed in their names in the female ward.

The Birth-rate in Manchester.

Dr. E. Sergeant, the county medical officer, in his recent report stated that the birth-rate for Lancashire in 1912 was the lowest on record, with the exception of 1910. In Manchester up to the end of September there has been an appreciable increase in the birth-rate.

Nov. 11th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Dinner of the Medical Institution.

THE biennial dinner was held on Nov. 8th at the Exchange Station Hotel, when about 160 members and guests sat down. Among the guests were the Bishop of Liverpool, the Lord Mayor, Dr. W. S. A. Griffith, and the Presidents of the medical societies of Chester, Birkenhead, St. Helen's, and Wallasey. Mr. Robert Jones, the President of the society, was in the chair. After the usual loyal toasts, Dr. Caton proposed "The City and Port of Liverpool," and spoke of the many improvements that were taking place. The Lord Mayor, in replying, paid a high tribute to the work of the profession, and more especially to the work of the Tropical School, inasmuch as the world owed the completion of the Panama Canal to tropical research. He thought the greatest requirement now was better means of communication between the two banks of the river, so as to unite the population of the district. The Bishop of Liverpool proposed "The Liverpool Medical Institution," and gave a short account of its origin in the eighteenth century and how it had grown by the union of three parent societies between 1830 and 1840. He said it was owing to the Medical Institution that the idea of a Liverpool University had begun. The President, in replying, said that the institution could boast of as great activity and as large meetings as any society in the country. Dr. Griffith, in replying for the guests, said that Dr. Rutter, in founding the society in its present form, had hoped that it might and would be the means of uniting its members in a firm and compact body, working on individualistic lines but in friendliness and with mutual esteem. A society such as this, by bringing its members constantly into contact with one another, might fulfil the wishes of its founder.

Visit of Sir Dyce Duckworth.

Sir Dyce Duckworth has been visiting the city of his birth as the guest of Mr. T. H. Bickerton, who entertained a large party at dinner to meet him before the meeting at the Medical Institution. After the meeting there was an informal gathering at Mr. Bickerton's house, when about a hundred medical men had the pleasure of hearing from Sir Dyce Duckworth his reminiscences of bygone Liverpool medical men. Among a large number of past leaders Sir Dyce Duckworth paid especial tribute to the Bickersteths, quoting Symes as having said that E. R. Bickersteth was "the finest surgeon in England."

The Passing of Two Notabilities.

Two well-known figures for many years connected with the Royal Infirmary have passed away—the Rev. William Smith and Mr. James Lister. Mr. Smith was chaplain at the infirmary from 1865 until he resigned about a year ago. He died quite suddenly on his way to church on Sunday, Oct. 26th. Mr. Smith had qualified as a medical man. Under rather an austere exterior there was a kindly personality which endeared him to those who really knew him. Mr. James Lister had for many years been a member of the committee of the Royal Infirmary, in which he took the greatest possible interest, making frequent visits there and personally knowing many residents, nurses, and patients.

Nov. 11th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Tuberculosis in Lanarkshire.

ARRANGEMENTS are now in progress for a joint sanatorium for the burghs of Hamilton, Motherwell, Wishaw, and Rutherglen, and a site has been purchased on the estate of Muirbank, Strathaven. It is proposed to build a hospital pavilion for 20 beds, two chalet pavilions, each with 20 beds, and two shelter pavilions of the same capacity; an administrative block (for which Muirburn House will be

utilised), including nurses' accommodation; medical superintendent's house, porter's lodge, and six houses for workmen, along with accessory buildings and plant. The estimated cost is £30,000.

Medical Arrangements for Lothian Miners.

An agreement has been come to between the doctors of Mid and East Lothian and the Miners' Federation, whereby medical attendance will be given to the families and dependents of miners. The men are to be allowed to select their own doctor, and will pay a flat rate of 1½*d.* a week, or 2*d.* per week including medicine. Cards will be issued to all the miners on Nov. 15th, and the doctors will have duplicate cards in order that they may know how many individuals the various colliery companies are thus responsible for.

Nov. 11th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Insurance Commissioners and the Medical Profession.

SEVERAL Insurance Committees have already passed resolutions urging the Insurance Commissioners to use their best exertions to come to an amicable agreement with the medical profession. Some of the more important Approved Societies have expressed the opinion that without the goodwill of the profession it was impossible to work the Act with success. Whatever may have been the operating cause, the Irish Insurance Commissioners, after some six months' cessation of intercourse, have resumed communication with the authorised representatives of the profession, as I announced last week. As the Irish Medical Committee is already accredited to speak for the profession, it possesses all the requisites demanded by the Commissioners for making definite terms, and rumour has it that the Commissioners will be prepared to offer terms which the profession may find itself able to accept.

Evening Dispensaries for Poor-law Medical Officers.

The Cork guardians in appointing a medical officer recently stipulated that, in addition to attending a daily dispensary in the morning, he should also attend for half an hour each evening. As far as I know, no evening dispensary has hitherto been held under the Poor-law in Ireland. Commenting on the proposal of the Cork guardians, the Local Government Board remarked that the medical officer would not be able in the evening to give the individual care and attention to the patients which their condition would require, as he would then be tired after his day's work. Punctual attendance in the evening might also occasionally curtail within narrow limits the time for visiting patients in their own homes. The Board, it was added, would sanction, as a tentative measure, the opening of the dispensary on two evenings a week, on condition that attendance thereat should be limited to persons who, owing to their employment, were prevented from attending the morning dispensary.

The Scarlet Fever Epidemic in Belfast.

At the monthly meeting of the City Corporation of Belfast held on Nov. 3rd it was reported that 378 cases of infectious disease had been notified in Belfast between Sept. 14th and Oct. 18th, and of these 264 were of scarlet fever. During the previous five weeks the number of notifications of infectious disease was 286, and the number was 235 in the corresponding period of last year. The chairman of the public health committee said, in submitting the health report, that the increase was due entirely to the large number of cases of scarlet fever. "They were just suffering as all large cities suffered," and that "it (scarlet fever) was a disease that it was practically impossible to control the spread of when it had developed to a certain extent, but everything that could be done to control the spread of it was being done." The situation is becoming too serious for a do-nothing policy. At a meeting of the public health committee held on Nov. 6th it was reported that there had been notified during the week ended Nov. 1st 66 cases of scarlet fever, which is six less than in the previous week. The epidemic is still raging, and at the present time there are in the two fever hospitals about 430 cases, and—what is worse—the type of the disease is severe, bad septic throats and nephritis being common.

Royal Victoria Hospital, Belfast.

At a meeting of superintendents of the various districts in connexion with the Royal Victoria Hospital special Saturday collection it was reported that a sum of £1011 had been handed over to the hospital authorities as the result of this special effort. This was £44 more than last year. The expenses were £79.

Down County Council and Tuberculosis.

The Down county council decided on Nov. 6th to adopt a scheme for the treatment of tuberculosis, which contemplated a sanatorium with 75 beds, together with a central dispensary and five branch dispensaries, the charge to the rates being reckoned at about £2569.

The Late Mr. William Watts Thetford.

I regret to announce the death, at the age of 90, at his residence, Strangford, Co. Down, of Mr. W. W. Thetford, M.R.C.S. Eng., L.R.C.P. Irel., who was the oldest medical practitioner in Ireland. Born at Clones, Co. Monaghan, on March 19th, 1823, Mr. Thetford was the son of Mr. Joseph Thetford, who was of English descent, having come from a Norfolk family, while his mother, a daughter of Major H. W. Stephens, of Co. Fermanagh, was of the blood of the Argyles, and with his family remains the old marble bowl of Inverara, with inscription, attesting his descent from the Argyles. Dr. Nicholas Thetford, grandfather of the deceased, and his seven uncles were doctors. In 1849, after studying at Trinity College, Dublin, and at the Richmond Hospital, Mr. Thetford obtained the M.R.C.S. Eng., and in the following year that of L.R.C.P. Irel. For half a century he resided at Strangford, Co. Down, where he had one of the very best practices in Ireland, his *clientèle* including a very large number of the principal families for many miles round his home.

Nov. 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Professor Charles Richet and the Nobel Prize.

THE Nobel prize for medical science has been awarded this year to Professor Charles Richet, who received the news by telegram while attending the marriage of his son. The award has been acclaimed in France as having fallen to a French *savant* who is held in the highest regard. Already the award of the Moscow prize at the congress in London for

his researches on anaphylaxis had drawn to him the attention of the scientific world, and had, perhaps, prepared it for the award of the Nobel prize. M. Charles Richet, who was born in 1850, the son of a famous surgeon himself a professor at the Paris Faculty of Medicine, was nominated *agrégé* of the Faculty of Paris in 1878, and in 1887 succeeded Béclard in the chair of physiology in the same Faculty. Among his numerous works the best known are the discovery of serotherapy and of anaphylaxis. He it was who, in 1888, in collaboration with Héricourt, first showed that by the injection of the serum of vaccinated animals into other animals the same immunity was transferred to them. The first injection in serumtherapy in man was made by Richet in December, 1890, and it was only shortly afterwards that Behring and Roux applied this discovery to diphtheria by the method that is now general. The discovery of anaphylaxis was a consequence of researches on the toxicity of the poison of actinia in 1902. Richet, while trying to determine the toxic dose, was struck with the fact that animals inoculated with a sufficiently powerful dose, yet failing to succumb, died when inoculated later with a much weaker dose. He divined the significance of this fact, which has entirely upset our ideas based on the mechanism of an immunity created by weak and progressive doses. Charles Richet is, moreover, one whose inquiring mind wanders over every field. He has occupied himself with aviation, psychical science, telepathy, pacificism, literature, poetry, and the drama. He is president of the Société Français pour l'Arbitration des Nations.

X Ray Burns.

A procedure has been put forward which appear to afford a definitive protection against the X rays in the case of operators who have to manipulate the apparatus during long periods. Hitherto, specially made gloves which absorb from 60 to 80 per cent. of the X rays have been used, but these gloves still remained permeable to the hard rays. Dr. Ménard, head of the radiographic department at the Hôpital Cochin, has devised a method which appears to afford perfect protection, and this has been brought before the Academy of Sciences by M. Moureu. A special cupboard or chair is used, the three panels of which are furnished inside with sheets of lead at least 4 millimetres thick. Both the patient and the ampoule are placed inside the apparatus; the hands of the radiologist are protected by gloves of caoutchouc tissue in which lead salts and barium sulphate have been incorporated. They are 4 millimetres thick, and their weight is considerable, but they can be handled easily enough, and careful experiments have shown that they are absolutely impermeable to the X rays. The operator is thus entirely protected against X ray dermatitis. On the other hand, when the patient is enclosed in the cupboard together with the ampoule the rest of the laboratory is entirely cut off from the X rays, and the radiologist and his assistants are completely under cover. All the experiments have been controlled by means of photographic plates, which have remained unaffected when exposed to these conditions.

The Casier Sanitaire, Tuberculosis, and Cancer.

For many years there has existed at the prefecture of police a docket for every house in Paris, in which every death and every case of notifiable contagious disease is recorded. The system, which was established by M. Juillerat, and is known as the Casier Sanitaire, is beginning to furnish extremely interesting results by pointing out in what houses and quarters certain diseases are endemic. M. Juillerat has noted buildings in which tuberculosis constantly appears in all their successive occupiers, indicating the necessity for the demolition of the buildings. Tuberculosis also is more frequent in those rooms of a house that never get the sunlight. Architects ought always to place sleeping-rooms on the side of the building that overlooks the street, which receives more light and air, but they are usually relegated to the other side, where there will be less dust and noise. The statistics of the Casier from 1909–12 show a progressive, though still insignificant, diminution of pulmonary tuberculosis in Paris. In 1912 the Casier Sanitaire registered 9281 deaths, or 90 less than in 1911, 168 less than 1910, 433 than 1909, and 981 less than 1907 and 1908. On June 1st, 1913, 363 fewer deaths than at the corresponding date of 1912 had been registered, showing no arrest in the diminution. Eleven of the houses marked as tuberculous were demolished in 1912, which raised the total of those destroyed since 1905, and in which altogether 4162 persons had resided, to 61. Further, the Bureau des Services d'Hygiène has imposed upon owners, under the law of Feb. 1st, 1912, the carrying out of the work considered necessary by the Service Technique de l'Hygiène de l'Habitation, and where necessary has prohibited the use of buildings for habitation. At the end of 1912, out of 2758 houses visited 1758 had been put into sanitary condition, and the rest were undergoing the process. In the houses rendered sanitary between March 1st, 1911, and March 1st, 1912 (sheltering 31,391 inhabitants), the mortality had fallen by 1·60 per 1000. Finally, in 1912, in the totality of houses rendered sanitary by order of the administration, the mortality had fallen by 2·39 per 1000 inhabitants from its level previous to administrative control. Unfortunately, there are in Paris six islets (*ilots*) which remain all the time in the same insanitary condition, in spite of all individual attempts. They suffer from an irremediable defect due to the narrowness of the streets and the gloominess of the locality, which only the law of exappropriation for sanitary purposes can do away with. The efforts of the Bureau du Casier Sanitaire in regard to tuberculosis are facilitated by the coöperation of the dispensaries, notably those of Léon-Bourgeois, Albert Robin and Jacques-Siegfried, Omer-Talon and Jouve-Rouve-Taniès, and the preventorium in the boulevard Garibaldi. In regard to cancer, also, the observations of the Casier Sanitaire are very interesting. In 1912 there were registered 2993 deaths, divided between 2841 houses and 25 various establishments. It is worthy of remark that the quarters that have recorded one death from cancer contain 13·34 per cent. of "tuberculosis houses"; those which show two deaths from cancer, 29·32 per cent. of such houses; those showing three deaths, 46·52 per cent.; those with four deaths, 61·19 per cent.; those having five deaths, 80·77 per cent.; and finally, those quarters with six deaths and upwards from cancer were entirely tuberculous. Are there cancer houses as there are tuberculosis houses, and does cancer readily take root where there is tuberculosis? Eloquent figures enable us to speak. During a period of six years, out of 15,114 houses recording deaths from cancer, 498 have recorded at least three, one has even had 11. On the other hand, out of the 498 houses particularly affected by cancer, 252, or more than half, are clearly tuberculous.

Nov. 9th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Battle of the Clubs.

AN extraordinary meeting of the Aerztevereinsbund and the Leipziger Verband was held in Berlin on Oct. 26th for the purpose of taking measures against the hostile attitude of the sick clubs described in my last letter.[1] The meeting was attended by 458 delegates, representing 384 branches with 21,207 members. The President, Dr. Dippe of Leipzig, stated that the clubs declined to enter into further negotiations not because it was impossible for them to agree with the demands of the Medical Union, but because they wished to destroy the Union and to make separate arrangements with individual medical men. Unfortunately, in three large towns—Berlin, Hamburg, and Dresden—the medical profession, because of the numerous outsiders practising there, has made separate contracts under less favourable conditions than the general demands of the Medical Union, but better than those hitherto existing. In the kingdom of Würtemberg the demands of the Union have already been agreed to by the clubs, but in the other parts of the empire a conflict is imminent. In the course of the debate delegates of various districts reported that complete unanimity existed in the profession, the members of which had pledged themselves over their signatures not to enter into further negotiations with the clubs. It having been proposed that members of the Union should decline to enter into further negotiations with the clubs, and that from Jan. 1st, 1914, they would attend club patients only under the same conditions as private patients, the motion was almost unanimously approved, only four delegates, representing 164 members, dissenting.

The Emperor William Institute for Experimental Therapy.

The Institute for Experimental Therapy in Berlin, built with funds collected on the occasion of the Emperor's jubilee, was formally opened on Oct. 28th in the presence of the Emperor and a large party of distinguished personages, including the Minister of Public Instruction, the President of the Imperial Health Office, the General Staff Surgeon of the Army, Professor Ehrlich, of Frankfort, Professor Waldeyer, of Berlin, Professor Noguchi, of Japan, Professor Harnack, President of the Emperor William Society, and many others. The institute, of which Professor Wassermann is the director, contains a department for serology and bacteriology and a chemical department, the latter being under the special care of Professor Neuberg. The bacteriological and serological department has two large laboratories with six working places, and two smaller laboratories with one working place respectively, besides the private laboratory of Professor Wassermann; the chemical department has a larger laboratory with four working places and several smaller rooms. There are an aseptical operation room for operations on animals, and stables with special arrangements to prevent animals which have been operated upon from pulling off their dressings. The whole institute, consisting of the principal building, the residential building for assistants and guests, and two stable buildings, was finished within the extremely short time of six months. The Emperor was shown over the premises and Professor Wassermann demonstrated the method according to which certain experimental processes were conducted and the ultimate effects obtained in others, including the Wassermann reaction in cases of syphilis and the results of the treatment of malignant growths in mice by selenium. In the neighbouring institute for chemical physics and electro-chemistry a meeting of the Emperor William Society for the Progress of Science was afterwards held, where Professor Hertwig, of the University of Berlin, read a paper on New Problems of Experimental Biology. The Emperor thanked the speaker and also Professor Wassermann, wishing him much success in his work.

Dr. Friedmann's Treatment of Tuberculosis.

On Oct. 25th Dr. Friedmann showed a number of patients treated according to his method in the medical clinic of Professor Kraus in the Charité Hospital in Berlin. Professor Kraus stated that some remarkable instances of improvement had been observed, and that hitherto no harm had been done to the patients by the injections. Dr. Friedmann finally declared that he was now willing to deliver his remedy to the medical profession for general use. According to the *Berliner Klinische Wochenschrift*, where Dr. Friedmann has described his procedure, the remedy is sold in four forms, namely: No. 1, green ampulla, containing 0·5 cubic centimetre of strong concentration; No. 2, a blue ampulla, containing 0·5 cubic centimetre of weak concentration; No. 3, a yellow ampulla, containing 1·0 cubic centimetre of strong concentration; and No. 4, a red ampulla, containing 2·0 cubic centimetres of strong concentration. Dr. Friedmann distinguishes between four different kinds of injection—namely, an intramuscular injection with No. 1 solution; a simultaneous intravenous and intramuscular injection with No. 2 and No. 3 solutions; an isolated intravenous injection with No. 2 solution; and intrafistular or intramuscular injection with No. 4 solution. The No. 1 intramuscular injection is indicated in slight cases of pulmonary tuberculosis and in very severe cases complicated by cavities and mixed infection; also in lupus. A second simultaneous injection with No. 2 and No. 3 respectively must not be made in lupus sooner than eight weeks after the first injection, and only when the healing process makes no further progress. The simultaneous injection with No. 2 and No. 3 is indicated in latent surgical tuberculosis of the bones, tendons, and glands, and in tuberculosis of the genitals and intestines, and finally in tuberculosis of the lungs when dyspnœa is a prominent symptom. In from five to nine hours after the simultaneous injection pyrexia usually develops, with headache, nausea, and vomiting, together with increase of cough and discharge; these symptoms usually disappear within a few days; no harm has been done by these symptoms in more than 1000 injections of that kind. The isolated intravenous injection is indicated when the infiltration at the site of the intramuscular injection begins to swell and to become painful. In this way a suppuration is almost absolutely avoided, and a rapid decrease of the infiltration is produced. In tuberculosis of the lungs the first dose is 0·2 cubic centimetre, which must be injected into the muscles; the second injection must not be made sooner than eight or ten weeks later, and only when the first injection has been absorbed and the healing process

[1] THE LANCET, Nov. 1st, 1913, p. 1283.

makes no farther progress. When after the second injection, 10 or 12 weeks after the beginning of the treatment, no remarkable improvement has taken place, a simultaneous injection is indicated which usually produces a remarkable improvement. If necessary a fourth injection may be made after four months. In fistulæ of bones and joints the first injection must be made with the No. 4 solution. The principal rules for the treatment are that the second injection must not follow the first too early, never before the first infiltration has been absorbed, and never as long as the healing process is still advancing. The remedy must never be used later than 48 hours after the date marked on the bottle.

Foreign Lunatic Paupers.

According to a recent agreement between the British and German Governments concerning lunatic paupers a German lunatic pauper who has been admitted into a British lunatic asylum at the public expense must be repatriated on the request of the British Government to that effect, provided that he has not been in Great Britain longer than 14 months. A similar course will be taken by the German Government in the case of British paupers admitted into German lunatic asylums. The patient must, however, be repatriated only after his home Government has consented to receive him and has specified the place where he is to be delivered to the authorities of his home Government.

Nov. 11th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The National Congress of Pædiatrics.

THIS Congress was held at Bologna from Sept. 21st to 26th. The principal subjects discussed were Disturbances in the Nutrition of Breast-fed Infants, Glands with Internal Secretions in Relation to Infantile Pathology, and Vaccination against Small-pox. On the second subject Professor Simonini and Professor Cattaneo presented their report in a volume of 400 pages. The interest of the third subject was mainly supplied by the presence of Professor Ruata, a well-known opponent of vaccination, who urged: (1) the hypothetical nature of vaccine and the failure to demonstrate its identity with the organism causing small-pox; (2) the failure to obtain immunity by vaccination; and (3) the needlessness of vaccination when recourse can be had to the remedy of isolation. In the ensuing discussion a great point in favour of vaccination was made of the fact that 74 out of 80 English insurance companies insist on vaccination in the applicants for life policies, and the final vote, passed with but three dissentients, expressed the confidence of the members of the Congress in Jennerian vaccination, with the hope that the Government would undertake the manufacture of the vaccine and insist on the scrupulous observance of the law of compulsory vaccination.

Proposed Medical Week.

The large number of medical congresses being held in different cities of Italy at this time of the year has aroused the attention of the profession to the great waste of time, energy, and money involved. Congresses at Parma, Milan, Siena, Turin, Genoa, and Naples, within the space of a month make it impossible for the average medical man to take advantage of such gatherings. It is now proposed that at stated intervals of, for example, two years, there should be a medical week in some city in the centre of Italy, and that all the congresses should be held contemporaneously during the week.

Nursing Reforms.

I have on various occasions in these notes drawn attention to the growing conviction in Italy of the need of improvement in the nursing service of the hospitals and the realisation of the advantages of the employment of women in this service. The proposed unification of the schools for midwives and those for nurses promises a practical solution of the problem. There are schools for midwives in every important centre. It is proposed that the course should be lengthened to three years and the special instruction in midwifery be given in the final year to those who have already taken their diploma in general nursing. This should ensure efficient nursing either in sickness or childbirth and at the same time raise the professional and social status of the midwives.

An Illiterates' Election.

The recent general elections, the great excitement of the past few weeks, have more than a political interest. This has been the first occasion for the exercise of the universal manhood suffrage recently conceded in this country. As a very large proportion of the voters, more than 75 per cent. in some districts, can neither read nor write, the expedient of emblems has been adopted. Each candidate has his own emblem, as, for example, a lion, an aeroplane, or his own portrait. When the voter enters the polling booth the president of the section hands him an envelope and a number of ballot papers, upon each of which is printed the name of one candidate and his emblem. The voter retires into a kind of closet, much like a telephone cabinet, where he chooses the ballot paper of the candidate for whom he means to vote, puts it in the envelope and seals it up; he then returns with it to the president, who deposits it in the urn. The plan has answered admirably, for very few votes were spoilt. The new electors, however, showed but slight interest in the exercise of their newly acquired privilege. The percentage of voters who came to the poll was certainly under 50. The Socialists were able to bring up greater numbers than the other parties, and have largely increased their representation in the Chamber. One of the principal planks in their platform was opposition to the war in Tripoli. The election campaigns were also to a great extent conducted pictorially for the benefit of the illiterates, and the rejoicings of the victors in Florence must have reached the intelligence of the same class when some thousands of the Socialist party passed by night in procession through the streets with torches and chanting funeral dirges behind a mock hearse with the emblems of their defeated rivals.

Nov. 11th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Imre Réczey.

AFTER a long illness Imre Réczey, professor of surgery in our University, died on Nov. 1st in his sixty-seventh year. Both as a surgeon and a teacher he held a pre-eminent position. During his professorship, lasting 21 years, a whole generation of young medical men received their training from him. He had great success also as a teacher

of military surgery. Since 1895 he was president of the Interhospital Association. In 1898 King Francis Joseph conferred on him the Third Class of the Order of the Iron Crown. His literary works were read beyond the borders of Hungary, several of them having been translated into German. His best known work was on the subject of the malignant tumours of the bones, and was translated into German and French.

Cholera in Hungary.

The official gazette of the Ministry of Public Hygiene (Ministry of Internal Affairs) publishes the following report on the occurrence of cholera in Hungary. The first of the recent series of cases declared itself on July 19th at Temessziget, and was soon followed by four others. Afterwards for about two weeks there were no fresh cases of cholera notified. On August 4th one sailor on the ship *Nera*, in harbour at Titel, fell ill with cholera. Independently of this man isolated cases occurred on August 11th in the same county at Kevevara, and in the neighbouring county in Ujvidék. During the first few days of September, near the Galician border in the county of Bereg, several cases were reported. The disease spread along the river Latoreza. In 26 villages the number of cases amounted to 139, out of which 82 terminated fatally. On Sept. 7th seven cases occurred at three different places in Budapest, but fortunately the disease was checked, so that no more cases were observed. During the first ten days of September fresh cases of cholera occurred near the Roumanian and Servian frontiers. In this time not only the fæces of cholera patients but also those of persons suspected to be suffering from the disease were bacteriologically examined. Until Oct. 10th cholera occurred in 16 out of 64 counties. The number of cases was 549 with 272 deaths. As regards the number of cases of cholera in a single place the greatest numbers were notified in the villages of Szenttamas (43 cases) and Szakalar (42 cases). During the week from Oct. 12th to 18th there were 70 fresh cases reported with 33 deaths.

The Results of the Abderhalden Gestational Reaction.

At a recent meeting of the Budapest Royal Medical Society Dr. Scherer read a paper on the Abderhalden Reaction and the results obtained therewith. He said that the two methods suggested by Abderhalden did not work equally well. The optical method gave very precise results, but had some drawbacks, the principal one being that the production of the necessary placenta peptone was very difficult and required special skill. A polarising apparatus had also to be provided. The dialysing method was much easier. Dr. Scherer gave a practical demonstration of the method, and called the attention of the members to the principal sources of error. In his opinion fallacious results were to be attributed to faulty manipulation rather than to the failure of the method. He acknowledged, however, that this reaction was not yet quite reliable, and it was to be hoped that improvements would be made rendering it as perfect a method as the optical one.

Death of Professor Otto de Schwartzer.

The Hungarian medical profession has suffered a great loss by the death of Professor Otto de Schwartzer, the well-known psychiatrist. He had an attack of apoplexy as he sat at his writing desk preparing the annual report of the Red Cross Society, of which he was the president. He was in the sixtieth year of his age, having been up to the last in the full enjoyment of vigorous health. He was not only the leader of the Hungarian alienists, but an authority on general public hygiene, and active in upholding the rights and position of the medical profession. His Majesty King Francis Joseph rewarded his merits by conferring upon him and his lawful offspring a title equivalent to that of a baronet in the year 1904.

Nov. 8th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Bogus Medical Degrees.

THE Government of India has circularised all local governments to give their views as to an All India Act for the registration of medical degrees or for each province to have its local Act, and the local governments are now receiving the views of the more important medical men in India. It was to be expected that a certain amount of opposition would be given. The secretary to the British India Association, Calcutta, has sent a protest to the Bengal Government. Briefly, the association's views are as follows. They note the registration will exclude homœopaths, kabirajes, hakims, vaids, and those carrying out the Yunnani system of medicine. They put medical degrees not officially recognised into two classes—viz., (1) those of foreign origin, and (2) those given by private institutions. With respect to private institutions, they contend the degrees given are not "bogus," as those qualifying have to go through a medical course, even if it be not regarded as of high standard, and as their nature is well known they do not deceive anybody. They say that these institutions do useful work in providing a class of men much wanted in this country in view of the small output by colleges, and that they are preferable to quacks. They are willing to concede some control, and submit the standard should not be raised too high. The improvement of the institutions should be gradual. Finally, they are doubtful if the proposed measure will secure the desired result. Medical registration is very necessary, but there are obvious difficulties to be overcome.

The All India Sanitary Conference.

The India Sanitary Conference, which is to be held at Lucknow in the cold weather, will be a thoroughly representative one, and a large gathering of experts is assured. Captain Needham, health officer of Simla, is to be placed on special duty for three months in connexion with the arrangements for the conference.

Chinese in Calcutta.

It is only in their homes in the by-lanes of Bow Bazaar that one gets a glimpse into the life of the Chinese in Calcutta. They, like their countrymen the world over, are an industrious and thrifty people. Probably this accounts for their triumph over the Indian labourer, as the latter is, even when hardworking, not prudent as far as spending his earnings go. The houses in which the Chinese live also furnish an object-lesson to the Indian labourer. Even where a room is oppressively overcrowded there is not the same disregard for cleanliness as in an ordinary Indian labourer's home. Within the past few years the number of opium

dens in Calcutta has decreased, and it seems that the Chinese in Calcutta look down upon the opium habit.

The Cocaine Habit in Calcutta.

It is gratifying to observe that in dealing with a cocaine case which came before him recently at Calcutta the presiding judge made some very pertinent remarks on the gravity of the offence of illicit trading in the drug. A woman who had been convicted by the Second Presidency Magistrate and sentenced to three months' imprisonment applied for a rule to show cause why the conviction and sentence should not be set aside. This application was, however, refused, and the learned judge, in announcing the decision of the Court, remarked: "These cocaine cases have to be dealt with strictly. Once the case is proved the punishment ought to be deterrent." The trouble, however, is that the maximum punishment is only three months' imprisonment, and until the law is strengthened the miscreants who are responsible for the traffic will not be deterred from carrying on their operations.

The Women's Medical Service.

The grant of an annual subvention of 1½ lakhs of rupees towards the establishment of a Women's Medical Service for India, as a development of the Countess of Dufferin's Fund, is a step in the right direction, but only a step. There is a great hiatus between provision for 25 medical women and the scheme submitted last year for 50 doctors and 60 assistants, the cost of which was estimated by Sir C. P. Lukis at Rs. 5 lakhs per annum. Nor would anyone pretend that 50 doctors and 60 assistants could perform a tithe of the medical work which is now left undone among the millions of women in India. It is not to be imagined for one moment, therefore, that the project which is now announced satisfies the needs of the country or removes the demand upon private philanthropy. It will, however, serve a useful purpose in indicating the lines upon which future efforts may be developed.

Vaccination in Bengal.

Perhaps one of the most satisfactory features in the history of sanitary efforts in India has been the gradual increase of vaccination. The terrible scourge of small-pox has to a great extent yielded to this prophylactic treatment. Formerly the opposition of the ignorant, fomented by mischievous agitators, was very great, and vaccinators were frequently assaulted and driven out of the villages. A peculiarly dangerous form of inoculation with small-pox virus was prevalent in Bengal. Frequently the patient died or became stone-blind, but in those cases where he was only pitted with small-pox for life the preventive was complete, for the patient never got another attack of the disease. Vaccination became unpopular, because revaccination was necessary, and this was considered expensive. Gradually the opposition of the ignorant and prejudiced is disappearing. A good deal of opposition has been due in the past to want of tact and sympathy, as well as to ignorance. Under the careful supervision of civil surgeons and of the sanitary department this opposition is happily passing away. There is in these days a perceptible demand for vaccination, and this once established the feeling in its favour cannot but grow with experience of the results. It is by tackling dreadful scourges, such as small-pox, plague, and malaria, and by dealing tactfully and sympathetically with the prejudices of an ignorant and fanatical population, that Government slowly but surely builds up a link between the people and itself. Every well-wisher of India must view with extreme satisfaction the growing success of the struggle against small-pox.

Infant Mortality in Bombay.

The Bombay Government in its review of the health report of the Presidency for 1912 specially refers to the ratio of infantile deaths to registered births in Bombay city, which was 451 per 1000. The figure does not accurately represent the death-rate among newly born infants, because there has recently grown up a steadily increasing tendency for prospective mothers to go to their villages for the birth of children and to return to the city soon afterwards. The infantile death-rate therefore requires heavy correction, but the Government states its intention to initiate special measures to deal with the matter supplementary to those already taken by the municipality and the sanitary authority.

The City of Cawnpore.

The Government of the United Provinces has appointed an expert committee to consider the best means for the extension of the city of Cawnpore and its improvement.

Anti-Cholera Measures in Madras.

The Government of Madras has drawn up a comprehensive scheme with a view to the prevention of the spread of cholera and to ensuring that the drinking water in village wells shall be kept free from infection. It is said that the sanitary engineer, to whom the inception of the scheme is largely due, has devised a quite inexpensive and simple method in which pumps are to play an important part. The main difficulty which the Government has to face is that these pumps may be objected to on religious grounds. The Government has set apart £30,000 for the purpose, but, in view of possible opposition, will only put the scheme in force as an experiment in certain selected villages.

Antituberculosis Measures in Madras.

At a meeting of the King Edward VII. Memorial Committee it was decided to spend Rs.75,000 upon the creation of a tuberculin institute, and that the balance of money in the hands of the committee, which, with the Government contribution, will amount to about 4 lakhs, be funded for the purpose of supplying money for the upkeep of the institute and its research work. The institute is to be located in the neighbourhood of the Madras General Hospital. As the Government have to decide upon the advisability or otherwise of the removal of the hospital the work of construction of the institute must await the Government's decision on this point.

Oct. 20th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Small-pox in Sydney.

THE small-pox outbreak in Sydney presents no new features. The disease continues very mild in type and no fatality has been recorded. Although a female patient died in quarantine, after a confinement, it was from causes not connected with the attack of small-pox. Up to the present over 800 cases have been reported, and new cases crop up daily at an average of about 10. Some doubtful

cases have occurred in outlying towns, but on the whole it does not appear that the infection has really spread beyond Sydney. Repeated representations have been made in the Federal Parliament to induce the Government to withdraw the proclamation of Sydney as a quarantine area, but these have been unsuccessful. The promised legislation in New South Wales in the direction of compulsory vaccination has not yet been much in evidence, but the Premier has at last announced the text of the Bill. It provides for compulsory vaccination in infancy and revaccination about puberty, but any parent or any person of age liable may take an oath that they have conscientious objections, so that the measure will be rather farcical. Strenuous effort has been made to get the quarantine embargo removed from Sydney before the spring racing carnival, which begins on Oct. 4th. The New South Wales Board of Public Health drew up reasons why this should be done, and these were submitted at a conference between that body and the Minister for Customs (in whose department quarantine is) and Dr. J. H. L. Cumpston, Director-General of Federal Quarantine. No decision was arrived at, the Minister merely undertaking to consult the Cabinet, and unless some strong pressure is brought on the Premier it is unlikely the request will be granted.

Action against a Medical Man.

A libel action in which a medical practitioner was defendant attracted widespread public attention in Melbourne for some days. The plaintiff was a nurse employed at a private hospital conducted by the defendant at his own residence. Owing to some reprimand from defendant's wife the plaintiff and a junior nurse left their employment summarily. The defendant wrote a letter to the council of the Royal Victorian Trained Nurses' Association, of which the plaintiff was a member, complaining of her conduct, and upon this letter the action for libel was founded. It was alleged, among other things, that the nurse complained of and a junior nurse, who was not a member of the association, had acted unbecomingly in a variety of ways while at the hospital. These allegations both nurses denied. Evidence for the defendant was given by patients who had been in the hospital. The jury were left with 12 questions to answer on the direction of the judge, and of these, after an hour's absence, they found that 10 of the charges were libellous, and that they were not true in substance and fact. They found that the remaining two charges were true in substance and fact. They found also that the charges were malicious, and gave a verdict for £200. Judgment was given for this sum, with costs, to be taxed. A stay of proceedings for seven days was granted.

Commonwealth Pensions.

Australia has a population of something slightly over 4,000,000. What a financial burden these are carrying in old age and invalid pensions is shown by the following official figures laid on the table of the House of Representatives and covering the year ending June 30th. The Commonwealth commenced to pay old age pensions on July 1st, 1909, while that portion of the Act which authorised payment to women on attaining the age of 60 years came into operation on Dec. 15th, 1910. During the last 12 months 14,417 claims were received from all parts of Australia, including 5099 from New South Wales and 4638 from Victoria. In all 11,304 applications had been approved, while 1663 were awaiting determination at the end of the last financial year. On June 30th there were 82,943 pensions in operation, or 3872 more than at the same date 12 months before. The total amount paid in 26 fortnights was £2,449,434 for old age and invalid pensions.

Personal.

Dr. C. S. Ryan has retired from his position as surgeon to the Melbourne Hospital owing to having reached the age-limit. He was appointed assistant surgeon 34 years ago, and has acted continuously on the surgical staff ever since. Dr. Ryan is principal medical officer of the Victorian Military Forces and holds the rank of colonel. He saw service as a young man with the Turkish army inside Plevna during the famous siege of the Russo-Turkish war. He is extremely popular with all classes of the community, and on the occasion of his leaving the Melbourne Hospital for the last time the students and a number of old pupils formed a double line from the hospital to the gates and cheered their old teacher heartily as he passed between the ranks. Dr. Ryan is a native of Victoria, but a graduate of Edinburgh University.

Obituary.

The death is announced in Sydney of Mr. H. Critchley Hinder, one of the leading surgeons of that city. Mr. Hinder was surgeon to the Prince Alfred Hospital and a graduate of Sydney University. He was only 48, and had been in bad health for some months.

Oct. 3rd.

Obituary.

MATHIEU JABOULAY, M.D.,

PROFESSOR OF CLINICAL SURGERY AT THE UNIVERSITY OF LYONS.

IN the fearful railway disaster at Melun a very brilliant and distinguished French surgeon met his death under the most distressing circumstances. Professor Mathieu Jaboulay was travelling to Paris in the train which was wrecked at Melun to preside over the Concours d'Agrégation. This Concours, which had begun early this year, had been cancelled by the Conseil d'Etat for some informality, and it became necessary, therefore, to hold it again. In the same train were several other medical men also going to Paris for the Concours, but Dr. Jaboulay alone was not to be found after the accident. He was in the carriage into which the locomotive and its tender crashed with terrific force. His body remained buried in the wreckage, and was burnt up by the fire which broke out immediately. Even his remains could not be identified, although the Faculty of Lyons sent on by express train his pupil, Dr. Patel, to endeavour to establish the identification in some way. It was only by his watch, which was found beside a mass of ashes, that the horrible catastrophe was established beyond question.

Dr. Jaboulay, who was professor in the surgical clinic of the Faculty of Medicine of Lyons, was one of the most brilliant surgeons of the Lyons School, where he carried on the traditions of Ollier and Poncet. He was born on July 3rd, 1860, at St. Genis-Laval. He had a brilliant medical career. In 1884 he was appointed prosector at the Faculty of Medicine at Lyons and in 1886 became head of the anatomical department, being then only 26 years old. He was appointed surgeon to the

hospitals in 1896 and professor of clinical surgery in March, 1902. He was a very learned man, and endowed with remarkable surgical facility and courage. He worked out the treatment of goitre by exothyropexy, and that of exophthalmic goitre by division of the sympathetic. He devoted much attention to the anastomosis of vessels, and lately had turned himself very energetically to the study of cancer. He was a man of the highest capacities and always interested in regard to novelties. Among his pupils was Alexis Carrel, now of the Rockefeller Institute, New York, who delights to acknowledge his indebtedness to Jaboulay for his first initiation into science.

Among Professor Jaboulay's published works may be mentioned those on the "Microbe of Acute Osteomyelitis" (1885), the "Relations of the Optic Nerves with the Central Nervous System" (1886), the "Surgery of the Great Sympathetic and the Thyroid Body" (a number of his original articles collected and published in 1900 by Dr. Etienne Martin), and the "Surgery of the Nervous Centres, the Viscera, and Limbs" (1902). The appalling circumstances of his death accentuate the grief of the profession over his loss.

HENRY WALTER KIALLMARK, M.R.C.S. ENG.,

SURGEON-LIEUTENANT-COLONEL, ARMY MEDICAL RESERVE.

WE regret to announce the death in the last week of October of Lieutenant-Colonel Henry Walter Kiallmark at Ditchling, Sussex, in his eighty-first year. He received his medical education at University College Hospital, and qualified as a Member of the Royal College of Surgeons of England in 1855. After leaving University College Hospital, where he was house surgeon, he spent the early part of his professional career abroad, and became attached to the Ottoman army as a staff-surgeon. He then returned to England and for some 25 years was a well-known general practitioner in Kensington. His interest in military matters, however, was always keen, and the volunteer movement in the county of Buckinghamshire owed much of its prosperity to his active work. He served in the Royal Bucks Hussars as surgeon, retiring with the rank of surgeon-lieutenant-colonel, and he also held a commission in the Army Medical Reserve. He was a member of the Harvejan, Pathological, Obstetrical, and Royal Medical and Chirurgical Societies, and at one time vice-president of the Metropolitan Counties Branch of the British Medical Association. For some time after his retirement from professional work he continued to live in Kensington, and it was only a few years ago that he took up his residence at Hove, leaving that place for Ditchling in August last.

He took much interest in Epsom College and the Royal Medical Benevolent Fund on the committees of which he served. A man of kindly disposition and sound judgment he attracted many friends, and his influence was not lessened by his retiring disposition.

He was buried on Oct. 27th at Kensal Green Cemetery, the coffin being draped with the Union Jack. A large number of relatives and friends attended the funeral, including Colonel the Hon. Harry Lawson, M.P., Major Coningsby Disraeli, and Lieutenant-Colonel C. W. Cole, representing the Royal Bucks Hussars, and Mr. J. Bernard Lamb, secretary of Epsom College.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. G. Cantarano, *privat-docent* of medical pathology in the University of Naples.—Dr. Edwin Klebs, whose death was mentioned in last week's issue, was an eminent pathologist and bacteriologist, whose tubercle and phthisis serums under the titles of tuberculocidin and antiphthisin have been a good deal discussed. He seems also to have been the first to make use of cold-blooded animals in the preparation of bactericidal fluids. He was born in Königsberg, and studied medicine there. His first professorship was in Bern, and he afterwards held chairs in Würzburg, Prague, Zürich, and the Rush Medical College of Chicago. For the last 20 years he had been in Europe, and it was in Bern his death occurred. He was 79 years of age.—Dr. Charles McBurney, of New York, whose name is well known in England and on the continent in connexion with the diagnosis of appendicitis. His reputation as a consulting and operating surgeon in the United States was very great. He was an honorary Fellow of the Royal College of Surgeons, Edinburgh, and a member of many continental medical societies. As a clinical teacher, too, he was very popular and greatly respected. He was professor of surgery in the New York College of Physicians and Surgeons, and surgeon to a number of hospitals. His death is said to have been due to cardiac mischief, perhaps aggravated during a shooting expedition in Maine from which he had just returned. He was 68 years of age.—Dr. William Wathen, professor of midwifery and gynæcology in the University of Louisville.—Dr. Charles E. Michel, formerly professor of ophthalmology in the Missouri Medical College, St. Louis.—Dr. W. Lindow, of Prenzlau, sanitary privy councillor.

ROYAL SANITARY INSTITUTE.—A provincial sessional meeting of this institute will be held at Swansea on Nov. 21st, at 6.30 P.M., in the Free Library, Alexandra-road. A discussion will take place on Open-air Education and Sanitation, to be opened by Dr. Thomas Evans, medical officer of health and school medical officer, Swansea, and a Description of the Swansea Town Planning Scheme will be given by Mr. George Bell, borough surveyor, Swansea. General discussion is invited. A number of visits have been arranged for the following day. Tickets for admission of visitors may be had on application to Dr. Thomas Evans, public health department, 5, Prospect-place, Swansea, who is acting as the local honorary secretary of the meeting; and of the secretary of the Institute, 90, Buckingham Palace-road, London, S.W.—The British Columbia branch of the Royal Sanitary Institute held its first congress at Victoria, Vancouver Island, the capital of the province of British Columbia, on Oct. 22nd, when it held a joint session with the Association of School Trustees. Dr. Home (Victoria) explained the work of the Royal Sanitary Institute, Miss Alice Ravenhill (Shawnigan Lake) gave a much appreciated address on Six Points in School Hygiene, Dr. Wasson (school medical officer, Victoria) read a paper on Physical Defects Arising Before School Age, and Mrs. Peter MacNaughton (of the Vancouver School Board) spoke on Health as an Asset to the Student. At the evening meeting, the Bishop of Columbia, Dr. J. C. Roper, in the chair, Miss Ravenhill gave a most interesting account of the Development of Sanitary Protection through the Ages, and spoke also of the Sanitary Law of British Columbia; and Dr. Home read a paper entitled "Why Children Die," pointing out that these deaths were largely preventable. This is the first sanitary congress held in British Columbia, another being held at Vancouver on Oct. 25th. The members of the institute in Vancouver did good work last winter in training sanitary inspectors even before they were organised.

Correspondence.

"Audi alteram partem."

THE ETIOLOGY OF BONE AND JOINT TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—You published in your issue of Oct. 11th an abstract from the *Deutsche Medizinische Wochenschrift* of a paper by Professor Dr. B. Moellers on the Etiology of Bone and Joint Tuberculosis. The article dealt more especially with the type of organism found in these diseases. Dr. Moellers has seen fit to subject to criticism certain work which I have lately published, and I feel it incumbent upon me to reply to these criticisms.

The article which Dr. Moellers criticises appeared in the *Journal of Experimental Medicine*, Vol. XVI., No. 4, 1912, p. 432. It dealt with the type of organism in 70 cases of bone and joint tuberculosis operated on in the Royal Hospital for Sick Children, and the result of the investigations showed that 58 per cent. were bovine and 42 per cent. human in origin. The acme of Dr. Moellers's criticism is reached when he says that the results published in the *Journal of Experimental Medicine* should not be accepted "until the reasons for these results, differing so widely from all other authors, are made perfectly clear."

Dr. Moellers's original article is a short one, and gives little detail of the methods by which his investigations were conducted. Only 12 cases were personally investigated, the results of the other 163 cases being collected from the literature of the subject. The method he employed in differentiating the organism was the injection subcutaneously into rabbits of 10 mgm. of the culture. He apparently questions the value of the intravenous injection of a much smaller amount, for he says: "Whether Fraser has established another standard than other authors by making use of his intravenous rabbit inoculation cannot be determined, because he does not communicate his post-mortem protocols." The test which I have employed in the differentiation of bovine bacilli has been the intravenous injection into a rabbit of standard weight (2000 grm.) of 0·01 mgm. of tubercle culture; a bovine infection has been in every instance followed by a general tuberculosis. I satisfied myself of the value of the test before I put it into routine use, and it was largely employed in the investigation of the British Royal Commission on Tuberculosis. I quote from the Commission Final Report, Part I., pp. 4 and 5:—

> In rabbits generalised tuberculosis ending in death within 5 weeks resulted from the intravenous inoculation of 0·01 or 0·1 of a milligramme of culture of bovine tubercle bacilli. ..... The disease caused in rabbits by intravenous injection is characterised by extensive miliary tuberculosis of the lungs, liver, spleen, kidneys, and other parts of the body. ..... The results obtained by injecting the bovine bacillus into rabbits in the above doses are thus very striking and definite, and taken with the cultural characteristics of the bacillus afford a trustworthy means of recognising the bovine tubercle bacillus.

It is but reasonable to expect that the intravenous inoculation of a small amount of the culture should constitute a much more delicate test than the crude method of subcutaneous injections of a much larger amount. There exists, therefore, no ground for the suspicion which Dr. Moellers would throw upon the method of differentiating the organism. Dr. Moellers finds himself at a loss to explain the high proportion of bovine tubercle which the investigation of my cases revealed, and because he cannot do so he thinks it advisable that the results should be excluded from general consideration. Surely this suggestion is as unwarrantable as it is short-sighted. Would it not be better to face the facts and to recognise the explanations which undoubtedly do exist? It is probable that the striking difference between my results and those published by Dr. Moellers may be explained by certain distinctions of child life in this country as compared with those in Germany. This is a possibility which does not appear to have been thought of by continental critics. I take it that there are three factors which are responsible for the remarkably large proportion of bovine infection:—

1. *The age of the patients from whom the material was obtained*—all being less than 12 years. Dr. Moellers says that it is impossible to accept this as the entire explanation, and with that we agree: but it is important in so far as it has a definite bearing upon the other factors to be immediately considered.

2. *Milk infection.*—I expect Dr. Moellers does not realise the absurdly inadequate conditions under which milk control up to the present has been conducted in Scotland and Edinburgh is no exception to the rule.

3. *Milk sterilisation.*—It is quite exceptional for the poorer classes, from which my material has been derived, to boil or pasteurise the milk on which their children are nourished. In this way they contrast unfavourably with the corresponding classes in Germany, and it is by the standard of these latter that Dr. Moellers probably judges.

Now, Sir, I consider that I have satisfactorily shown that the basis upon which my results were founded has been perfectly sound. In my published paper I cited several obvious explanations of the apparent difference between my results and those of others; and if any further proof is required of Dr. Moellers's unwarrantable suspicion, it is this—viz., that the work which I began several years ago has been extended in parallel but different directions by other workers who have obtained results similar and even more striking than my own. Dr. A. P. Mitchell has courteously permitted me to draw attention to his, as yet, unpublished results.

Working on the type of organism occurring in tuberculous glands in children, derived also from the Royal Hospital for Sick Children, Edinburgh, he has found that 90 per cent. of the gland infections are bovine in type.

I am, Sir, your faithfully,

Edinburgh, Nov. 5th, 1913. JOHN FRASER, M.D. Edin.

NATHANIEL ALCOCK MEMORIAL FUND.

To the Editor of THE LANCET.

SIR,—Some months ago you were kind enough to insert an appeal for subscriptions in aid of the family of the late Professor Alcock. Owing to his early death he had been unable to make any provision for his family, and it was felt that the most appropriate form of memorial to his memory would be a fund to enable his three daughters and one son to receive an adequate education. A list of subscriptions received to date is given below. Since we desire to close the fund before Christmas, in order that it may be invested and the proceeds applied to the object mentioned above, we should be glad to receive any further subscriptions to the fund as soon as possible. Contributions may be

sent to either of the undersigned. Cheques should be crossed "Alcock Memorial Fund."

We are, Sir, yours faithfully,

E. H. STARLING,
Institute of Physiology, University College, London, W.C.
A. D. WALLER,
Physiological Department, University of London, South Kensington, London, S.W.

Nov. 7th, 1913.

LIST OF SUBSCRIBERS.

	£	s.	d.
Dr. H. K. Abbott	10	0	0
Rev. T. K. Abbott	20	0	0
Professor Adami, F.R.S.	10	0	0
Mrs. Alcock	10	0	0
Anonymous	500	0	0
"	50	0	0
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Dr. Hartley	2	2	0
Professor Yandell Henderson	4	0	0
Mr. Albert Hill	20	0	0
Mrs. Berkeley Hill	50	0	0
Miss Florence Hill	1	0	0
Professor Leonard Hill, F.R.S.	10	10	0
Mr. Maurice Hill	200	0	0
Mr. M. D. Hill	5	0	0
Mrs. Holland	10	0	0
Sir Victor Horsley, F.R.S.	10	0	0
Mr. A. Hurd	5	5	0
Dr. Kennaway	1	1	0
Mrs. Kingsmill	5	0	0
Miss C. A. Kingsmill	25	0	0
Miss E. E. Kingsmill	25	0	0
Rev. Dr. Kingsmill	30	0	0
Dr. Laird	0	10	6
Dr. Levy	2	2	0
Mr. Carvill Lewis	20	0	0
Dr. J. Little	5	5	0
Dr. Locke	5	5	0
Dr. Haynes Lovell	1	0	0
Dr. Luff	2	2	0
Dr. Roche Lynch	1	1	0
Professor Macleod	2	0	0
Professor Marshall	1	1	0
Dr. C. J. Martin	10	0	0
Lt.-Colonel McCreery	5	0	0
Dr. McNeight	2	2	0
Dr. Menzies	3	3	0
Dr. J. H. Milroy	1	1	0
Professor T. H. Milroy	2	2	0
Dr. Moorhead	2	2	0
Dr. Mott, F.R.S.	3	3	0
Professor Myers	3	0	0
Mrs. Frazer Nash	1	1	0
Dr. George Oliver	3	3	0
Mrs. Oliver	50	0	0
Professor Osborne	5	5	0
Mr. H. Page	5	5	0
Mr. William Page	5	0	0
Mrs. Penrose	50	0	0
Dr. Pringle	20	0	0
Professor Purser	21	0	0
Mrs. Ramsden	20	0	0
The Misses Rhys	20	0	0
Dr. Roaf	5	0	0
Dr. L. Rogers	2	2	0
Sir Edward Schäfer, F.R.S.	10	10	0
Professor Schryver	3	3	0
Dr. Shepherd	5	0	0
Professor Sherrington, F.R.S.	3	3	0
Dr. Sikes	1	1	0
Dr. Sutherland Simpson	5	0	0
Professor Lorrain Smith, F.R.S.	2	2	0
Professor Spearman	1	1	0
Dr. Spencer Scott	100	0	0
Dr. Spilsbury	2	2	0
Dr. Spriggs	1	1	0
Professor Starling, F.R.S.	10	0	0
Professor and Mrs. Peter Thompson	2	2	0
Dr. May Thorne	10	0	0
Professor Trouton, F.R.S.	25	0	0
Dr. Vernon	2	2	0
Mr. S. Wadsworth	30	0	0
Professor and Mrs. Waller	25	0	0
Mr. Harry Walters	10	10	0
Dr. Willcox	30	0	0
Sir Almroth Wright, F.R.S.	15	15	0
A Friend	5	0	0
Total subscriptions received to date	2010	13	0

THE ACCURACY OF CLINICAL THERMOMETERS.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 8th appears an article headed "Some Experiments with Clinical Thermometers." In this article an account is given of certain experiments with clinical thermometers, in which their accuracy is tested in regard to the variations they record when plunged into water of varying temperatures. Then follows the astounding statement "On the whole, the results show that for practical clinical purposes the thermometers gave fairly accurate readings." I beg to suggest that the results recorded are highly misleading as regards clinical work. The inference to be drawn from the statements made is that the temperature of the body is accurately ascertained by leaving one of the thermometers under discussion in the mouth for a period of two minutes. Such a method only ascertains in an extremely rough manner the temperature of the body, for the thermometer is under totally dissimilar circumstances when in a glass of water to that in the cavity of the mouth. Various clinicians have pointed out the serious errors which arise from this rough and ready proceeding, and the paper in your journal would tend to perpetuate this inaccurate method. I have tried many thermometers (Kew certified), and if they require two minutes in water they need 10–15 minutes in the mouth, unless the mouth has previously been kept closed in a warm room.

Malvern, Nov. 10th, 1913. MARY H. WILLIAMS.

*** Has Dr. Williams noted that in our experiments the conditions of environment of both the standard thermometer and the clinical thermometers tested were precisely the same? Any "dissimilar circumstances of the mouth" would apply equally to the standard thermometer.—ED. L.

To the Editor of THE LANCET.

SIR,—The letter from Dr. J. B. Cook which appeared in THE LANCET of Oct. 4th on the results obtained by testing a batch of clinical thermometers supplied under contract to the St. Giles' Infirmary, Cleveland-street, together with that of Mr. F. A. Hocking a week later, convey a lesson to the medical profession which should be taken to heart. A proportion of medical men in practice do regularly test the clinical thermometers which they buy and use for their patients; but the majority, I strongly suspect, omit this simple but very necessary act of precaution. Now that attention has been drawn to the point by the letters in question, it may be hoped that practitioners will take rather more trouble over this matter than most of them have been in the habit of doing. They may urge that so long as they pay a reasonable price for their thermometers, and buy them from respectable firms, the chance of error is exceedingly slight. That may be and most likely is true; but it is not a sufficient defence, for the consequences of any serious error in the graduation of a clinical thermometer can be so serious as to make the difference between life and death. There is, in fact, reason to believe that British-made thermometers, manufactured and sold at prices some hundreds per cent. cheaper than prevailed a few years ago, are accurate and trustworthy in a very high degree. But all thermometers are not British made, and even with respect to those that are, there is one reservation which must be made. A great many of these so-called "half-minute" thermometers do not really give true readings in that short space of time, though they may be perfectly reliable after longer incubation. As an instance of this may be quoted the following experiments recently undertaken by myself. Three thermometers sold by a well-known British firm at 1*s.* 9*d.* each and two by a British private maker at 2*s.* 6*d.* each were shaken down below 95° and placed under the tongue in the usual way; all five were marked "30 seconds." At the end of half a minute they read respectively 95·2°, 96°, 96·8°, 97°, and 97·4°. They were then incubated again for a full minute, and they then indicated 96°, 96·4°, 97·2°, 97·2, and 97·6°. They were

replaced for a further two minutes, after which four of them read 98·0° and one 97·6°. The clear duty of every conscientious practitioner is obvious—namely, to test every clinical thermometer he buys, in regard both to the accuracy of its graduation and to the time taken in reaching the temperature of the surrounding medium.

I am, Sir, yours faithfully,

Nov. 8th, 1913. PHYSICIAN.

*** These observations agree with the conclusions published in our issue last week. We then wrote: "For really accurate observations the 30 seconds thermometers give, generally speaking, more satisfactory results when they are incubated for more than 30 seconds, and according to the above experiments an incubation of a period of two minutes records the practical truth."—ED. L.

THE MEDICO-PSYCHOLOGICAL CLINIC.

To the Editor of THE LANCET.

SIR,—It has been impossible to ignore the press notices of the inaugural meeting of the Medico-Psychological Clinic. It is distressing to the committee to find that a great deal of misunderstanding has arisen, and we feel bound in justice to ourselves, to the pioneers of psychotherapy, and to the supporters of our movement to dissociate ourselves entirely and absolutely from the occult powers that Lord Sandwich claimed for himself. Lord Sandwich has expressed his sincere regret to the committee for the misunderstanding he has caused, and this terminates his association with the clinic and with the committee.

We profess nothing but ordinary medical knowledge acquired in the ordinary way. We have no gifts or methods not open to every practitioner. It is our belief that the clinic will attract cases of threatened nervous breakdown in a stage at which preventive measures may avert calamity. It will offer a place of study for medical practitioners who wish to acquaint themselves with practical psychotherapy. The whole of the healing art was cradled in superstition. In the minds of many psychotherapy is still tinged with charlatanism, and from this the clinic will help to dissociate it.

We feel sure that the profession will appreciate to the full the difficulties and delicacy of the work we have in hand, the dangers to be avoided and prejudices to be overcome, and we trust that it will join with us in aiding a work which must of necessity be the object of adverse criticism and unavoidable misconceptions in its early stages.

We are, Sir, yours faithfully,

HECTOR MUNRO.
J. M. MURRAY.
JOHN SPENCER.
CONSTANCE E. LONG.

Endsleigh-street, W.C., Nov. 10th, 1913.

THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—The figures below are of some interest if they are like those of others practising amongst the insured. The figures will doubtless expand during the winter months, and I reckon the payment we receive will work out at barely 1*s.* per professional attendance—an inadequate sum. Total acceptances, April 15th, 1078; June 30th, 1136; average per quarter, 1107. For 1107 persons accepted for treatment there were, visits, 187; attendances, 1261. June 30th to Sept 30th: Average acceptances, 1146; visits, 136; attendances, 1164. Total number of persons who have seen me once or oftener since April 15th, 601, or 50 per cent. of total on my list.

I am, Sir, yours faithfully,

Brighton, Nov. 8th, 1913. CHAS. FRASER.

THE NATIONAL INSURANCE ACT AND MEDICAL REFEREES.

To the Editor of THE LANCET.

SIR,—At the recent meeting of the London Insurance Committee, of which a short report appeared in THE LANCET of Nov. 1st, a recommendation of the General Purposes Subcommittee was considered which seems to me to raise questions of much importance.

The proposal was that the services of medical referees should be made available to Approved Societies desiring advice (1) as to whether an insured person was incapacitated as a result of illness or injury which might entitle him to receive or recover any compensation or wages under the Workmen's Compensation Act, 1906, or under the Employers' Liability Act, 1880, or otherwise as provided in Section 11 of the National Insurance Act, or (2) as to whether the insured person was suffering from a disease caused by misconduct in respect of which sickness benefit may be suspended under the provisions of Section 14 (2) of the Act. It was further recommended that the expenditure involved could be met out of the sum of £1000 authorised for the services of medical referees out of the Benefits Administration Fund.

The recommendation, I observe, met with opposition upon the committee, Mrs. Handel Booth moving that it should be referred back, but was accepted by a majority. It certainly appears to tend to impose upon medical referees duties outside those for the performance of which their appointment has appeared necessary and has been generally approved. Moreover, it seems to me that it would bring them into unnecessary contact with the Approved Societies and to constitute them investigators of matters outside the expression of medical opinion upon questions of disease. As I understand the matter, the contract for medical attendance is between the medical man and the Insurance Committee, and the certificate given by the medical man should state with accuracy the nature of the disease from which his patient suffers. It may be necessary or desirable that a medical referee should consider the accuracy of a statement as to the nature of a disease made in a certificate, and it may also be necessary or desirable that an Approved Society should be sure that its funds are not being depleted by a person who, owing to the manner in which his incapacity came about or his behaviour when under treatment, is not entitled to partake of them. It does not, however, follow that a medical referee should be employed to do more than make sure that a medical certificate correctly states medical facts, where *primâ facie* there is ground for suspicion that it does not do so. That the medical man attending a patient should have his attention called to the provisions of Section 11 or Section 14 (2) of the Act in respect of a particular case is not unreasonable. But his explanation or opinion on the question involved should be specifically obtained before a medical referee should be invited to intervene, and the intervention of the medical referee

should be confined within strictly defined limits. I submit that these, where they involve inquiries into the original cause of incapacity and the behaviour of a patient, should not go beyond such inquiries as the medical attendant on the panel might reasonably make in the same direction.

I am, Sir, yours faithfully,

Nov. 6th, 1913. MEDICO-LEGAL.

THE NATIONAL INSURANCE ACT.

THE REVISED REGULATIONS FOR MEDICAL BENEFIT.

WE have received from the Insurance Commissioners a copy of the draft Regulations dated Nov. 7th, 1913, which they propose to make under Section 15 of the National Insurance Act, together with a leaflet (Memo. 185/I.C.) which deals with the method which has been adopted in revising the Regulations for medical benefit and with the arrangements for providing this benefit during the year 1914.

These Regulations, which will come into operation on Jan. 12th next, will shortly be on sale.[1] They take substantially the same form as the original Regulations for medical benefit which came into force last year. The Commissioners state that the revision embodied in these new Regulations was undertaken with a view to the adoption of numerous suggestions made as a result of actual working experience, and for the purpose of simplifying and facilitating administration for all parties concerned. This revision has been completed after consultation with the Advisory Committee.

The Commissioners in the accompanying memorandum draw attention to some of the more important amendments in the revised Regulations, and suggest means by which Insurance Committees may enter into agreement with medical practitioners and pharmacists on the basis of the revised terms of service. It is particularly noted that the new Regulations do not affect the amount available for the remuneration of panel practitioners in respect of their services under the Act. Owing to the great difficulties experienced in the allocation of insured persons and the calculation of payments due to practitioners the Regulations have been modified. Insurance Committees are now relieved of the obligation to attempt such an allocation, while the First Schedule has been amended so as to secure that the "quarterly credit" of each practitioner shall be calculated on the numbers on his list at the beginning of the quarter, thus enabling the preparation of the quarter's accounts to be undertaken soon after the commencement of the quarter.

The system of complete personal allocation having been abolished, an equivalent provision is made for distributing the available funds among practitioners on the panel, in accordance with the right which they respectively assume. By this device panel practitioners are to be credited with additional capitation fees equal in number to the number by which the insured population entitled to medical benefit at the beginning of the quarter exceeds the total number on the practitioners' lists at that date.

The Panel Committees (referred to in our last issue) are to make arrangements in advance for the assigning among doctors on the panel, or some of them, of insured persons who subsequently apply to be assigned; and the method of distribution of the additional capitation fees will take into consideration the responsibility thus placed upon individual practitioners for patients subsequently assigned to them during the quarter.

The memorandum explains the general effect of the changes made in the new Regulations under the heads of Removals and Temporary Residents. The Commissioners claim that the main effect of these changes is in the direction of greater simplicity and uniformity. With regard to complaints, the powers of Insurance Committees have been enlarged in some respects, while panel practitioners will be afforded a general right of appeal to the Commissioners against any decision of an Insurance Committee on a question investigated by the Medical Service Subcommittee. The revision of the First and Third Schedules has involved corresponding changes in some of the actual Forms of Agreement, while clauses have been drawn up so as to meet the widespread desire expressed by medical practitioners, and endorsed by the Advisory Committee, to obviate the need of an appeal to the law courts in case of dispute between a panel practitioner and an Insurance Committee, as well as to meet difficulties due to breaches of the practitioner's Agreement not sufficiently covered by the previous Regulations. The memorandum concludes with suggestions for expediting the arrangements made by Insurance Committees for providing medical benefit for the medical year commencing January 12th, 1914.

[1] Draft Regulations, National Health Insurance (Medical Benefit), England, 1913. Wyman and Sons, Fetter-lane, London, E.C. Price 3½d.

ABERDEEN INSURANCE COMMITTEE.

At a recent meeting of the Aberdeen Insurance Committee a minute of the finance committee was discussed to the effect that the Scottish Insurance Commissioners should be asked whether they would be prepared to sanction an expenditure of £100 annually upon putting into effect Section 60 (1) (b) of the Insurance Act, 1911, which says that an insurance committee "shall make such provision for the giving of lectures and the publication of information on questions relating to health as it thinks necessary or desirable.[1]" Mrs. Ogilvie Gordon and Dr. Forbes spoke in favour of taking action under the section, and dwelt upon the necessity for education in matters of health in order to preserve the well-being of the community; the chairman intimated that the Commissioners had expressed in a letter general sympathy in the proposal, and the meeting was unanimously in favour of steps being taken under the subsection referred to. The question of the choice of a medical attendant by the insured was also discussed. 7700 postcards had been issued to those who had not made their choice, and of these 2633 had been returned, the number of those who after being specially communicated with had selected medical men amounting to 3000. Mr. John Milne, who introduced the report dealing with this topic, said that it was "a matter that interested insured persons very deeply, but they had also recognised that the medical men had their rights in the matter." Apparently the question of distributing without further delay those insured persons who had not felt deeply enough interested to make their choice has not yet been dealt with at Aberdeen, and the report of what had taken place was adopted without it being raised. At

[1] THE LANCET, Nov. 1st, p. 1280.

the same meeting it was stated that the Commissioners, in reply to questions on the subject from the Medical Service Subcommittee, said that in terms of his agreement the insurance practitioner must, at the request of an insured person who was on his list, furnish free of charge such certificates of incapacity as were required to be furnished in connexion with any claim for sickness or disablement benefit made by him in pursuance of the rules of the society of which he was a member. The insurance practitioner should furnish such certificates at the request of the insured person and any certificates necessary to satisfy the society that arrears were not to be reckoned. The practitioner was, of course, not bound to furnish certificates for the purpose of satisfying the employer as to compensation, but he should supply such certificates as were necessary to enable the insured person to obtain an advance from his society pending the settlement of his claim.

BRISTOL INSURANCE COMMITTEE.

At a recent meeting of the Bristol Insurance Committee some interesting figures were given by the chairman with regard to the work of the committee. At Bristol on July 14th there were 120,058 persons entitled to medical and sanatorium benefits. The addition of deposit contributors out of all benefits brought the figure up to 120,343, or about one-third of the whole population, a net increase of 6173 insured persons. Payment to medical men and institutions had been on account of 96,316 persons who had chosen their medical attendants and 11,304 treated through institutions; 12,723 persons had not chosen their medical men, an increase on the figure (less than 10,000) of a few months earlier. The disposal of a sum of £4453 was thus under consideration, and the chairman supposed it would some day reach the hands of the medical profession. He called attention to the disregard of 10 per cent. of the insured to exercise their right of choice, and expressed regret that the system of payment by incidence of sickness was not adopted by the medical profession at Bristol. This would have meant the distribution of the whole of the panel fund quarter by quarter, money would be earned by work done with less clerical work for the Committee and for the medical men, and there would have been no funds left to quarrel about in the future. He did not know whether it was now possible to change their system of remuneration, but he personally would welcome the alteration, and he believed that it would be for the benefit of the insured persons. The payment to druggists for work done and materials supplied was on a more business-like and satisfactory basis than that with regard to medical attendance, and he believed that the payment of fees for treatment accorded would ensure fewer complaints of perfunctory attendance. He described the capitation system as the voting of salaries, each vote being worth 7*s.* a year to its recipient. There were 117 medical men on the Bristol panel, of whom 61 received less than £200 a year, the average earnings of these amounting to £113. One medical man made over £1100 a year and two made over £1000. Half the divisible fund was shared by 26 medical men with an average of £650 per annum. The remainder was divided between 91, who took from £400 a year to a few sovereigns.

A report of the Medical Benefit Subcommittee on the subject of the medical adviser to the committee showed that after consultation with the Medical Service Subcommittee it recommended that the services of Dr. Bertram M. H. Rogers should be continued in this capacity for three months, the terms of service being a retaining fee of £82 10*s.*, and that Approved Societies with members in the area be invited not to appoint referees of their own, but to refer all cases through the committee to Dr. Rogers, at a charge of 2*s.* 6*d.* per case referred and 5*s.* per case examined; that medical men on the panel should also refer cases to him; and that the Commissioners be asked to appoint a permanent medical adviser—this to be, perhaps, eventually a whole-time appointment. The scheme referred to had received provisional approval from the Commissioners. The report was adopted.

Information was laid before the committee with regard to arrangements made by the Sanatorium Benefit Subcommittee for the reception of insured persons nominated by the committee at the Royal National Sanatorium, Bournemouth, at a fee of 30*s.* per week for each patient. Seven persons had been sent to this institution, and arrangements were pending for the sending of four more.

A CONFERENCE OF NON-PANEL MEDICAL SOCIETIES.

A conference of non-panel medical associations will be held in London at the Waldorf Hotel, Kingsway, W.C., on Saturday, Nov. 29th, at 3 P.M.

The National Medical Union, with the assistance of several leading London societies, is responsible for convening this meeting. Invitations are being issued to all known non-panel bodies, and the chief object of the conference is the promotion of the federation of non-panel organisations throughout the country. The promoters aim at making the meeting representative of all non-service practitioners, and secretaries of all such associations and all medical men who are not serving under the National Insurance Act are earnestly requested to communicate with the secretary of the Union, Mr. J. Webster Watts, 5, John Dalton-street, Manchester.

On Nov. 6th, at a meeting of the London Medical Committee, which is entirely non-panel, it was decided to send representatives to the Conference of Non-panel Associations. The committee appointed the chairman, Dr. Fred. J. Smith, Dr. Bernard O'Connor, barrister-at-law, and the honorary secretary, Mr. E. Arthur Dorrell, to be the representatives at the conference. A report was received by the committee that non-panel associations had been formed for Lambeth and for Islington and St. Pancras (combined). Also reports of meetings and of the strength of membership were received from Wandsworth, Hampstead, and Lewisham non-panel associations. A letter was received from a medical man in the Wandsworth district, who has unrivalled opportunity of observing the working of the Insurance Act in the poorer districts, showing how thoroughly the insured dislike the Act and the panel system with its restricted choice of doctor, and how "hundreds of panel patients come to me" either because they will not go to a panel doctor or do not wish to repeat the experience. The committee adjourned until Monday next, Nov. 17th.

ENFIELD LOCAL MEDICAL COMMITTEE.

A meeting of the Enfield Local Medical Committee (recognised as consisting of all the resident practitioners in the area) was held on Nov. 7th, and 12 members were present. The Commissioners' Circular 30/1C was considered, and it was resolved to memorialise the Commissioners in favour of the

election of the New Panel Committee for Middlesex by districts. It was decided that nomination papers be signed in favour of Dr. J. Busfield, Dr. R. M. Hall, Dr. H. Distin, Dr. F. W. Foott, and Dr. R. L. Ridge, but in the event of election by districts being sanctioned, and two members only being allowed for Enfield, that then the three latter would withdraw their nominations in favour of Dr. Busfield and Dr. Hall.

The honorary secretary was authorised to send the names of these two practitioners to the medical papers as the official nominees of the Local Committee; also to ask general support for these candidates, and to promise the support of Enfield practitioners to the officially recognised candidates of other Local Committees if in proportion to the practitioners in those districts. Dr. Tresilian, Dr. Busfield, and Dr. Ridge were elected as the medical members of the District Insurance Committee.

THE DEATH OF DR. HORACE DIMOCK.

The inquiry into the death of Dr. Dimock was resumed on Wednesday last by the coroner for the Isle of Ely, Mr. Martin Hall, who said that it had been agreed to adjourn the inquest again until Dec. 3rd, Dr. W. H. Willcox requiring a month to complete his analyses.

Revelations have been made as to the persecution to which Mr. H. C. Meacock and other practitioners had been subjected owing to the position which they considered it due to themselves and their profession to take up; and it has now become apparent to the public, as well as to the medical profession, that the legal action taken against the late Dr. Dimock was an absolutely defensive measure supported and conducted by the police. The statutory Local Medical Committee of the Isle of Ely have passed a resolution recording "entire confidence in the honour of its chairman, Mr. H. C. Meacock, and the other medical practitioners of Wisbech, whose characters have been assailed in a most scurrilous and underhand manner," and extending to them and their wives "most sincere sympathy in their recent undeserved trouble."

The panel remains closed to the Wisbech practitioners, Dr. H. G. Baynes having been appointed in the room of the late Dr. Dimock.

CENTRAL MIDWIVES BOARD.—A special meeting of the Central Midwives Board was held on Nov. 6th at Caxton House, Westminster, with Sir Francis H. Champneys in the chair.—A number of midwives were struck off the roll, the following charges, amongst others, having been brought forward: Having advised that a case was one in which the attendance of a medical practitioner was required, and a medical practitioner being in attendance accordingly, his instructions were not faithfully carried out as required by Rule E.6. Neglect to take the pulse and temperature of patients, as required by Rule E.13; neglect to wash the patient at any time; not being scrupulously clean, being ignorant of antiseptics and having no proper appliances, as required by Rule E.2. That when attending patients the midwife did not wear a clean dress of washable material, as required by Rule E.1. The bag of appliances was dirty, and had no washable lining. Not keeping the Register of Cases as required by Rule E. 23. Medical aid having been sent for, the midwife neglected to send any notification thereof to the Local Supervising Authority, as required by Rule E. 21 (1). A child suffering from inflammation of and discharge from the eyes, the midwife having explained that the attendance of a registered medical practitioner was required, she did not hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 20 (5).

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Giessen:* Dr. Alfred Brüggemann has been recognised as *privat-docent* of Otology and Rhino-laryngology.—*Greifswald:* Dr. Heinrich Gebb, *privat-docent* of ophthalmology, has been granted the title of Professor.—*Hamburg:* Dr. J. F. Wiesinger, surgeon to St. George's Hospital, Dr. Carl Sick, surgeon to the Eppendorf Hospital, Dr. Hermann Wilbrand, ophthalmic surgeon to St. George's Hospital, and Dr. Max Nonne, physician to the Eppendorf Hospital, have been granted the title of Professor.—*Lausanne:* Dr. Taillens, *privat-docent* of medicine, has been promoted to an Extraordinary Professorship.—*Naples:* Dr. Ermanno Cedrangolo has been recognised as *privat-docent* of Medical Semeiology.

MEDICAL MAYORS.—The following members of the medical profession have been elected or re-elected to the mayoral chair: Mr. J. Robinson, L.R.C.P.I., L.R.C.S.I. (Cardiff, Lord Mayor); Mr. Preston King, M.D., B.C. Cantab. (Bath); Mr. S. Hale Puckle, M.B., Ch.M. Edin. (Bishops Castle); Mr. J. Rafter, L.R.C.P.I., L.R.C.S.I. (Bootle); Mr. S. R. Alexander, M.D. Lond. (Faversham), re-elected; Mr. H. Foster Jeffery, M.B., Ch.B. Vict. (Heywood), re-elected; Mr. W. E. L. Davies, M.R.C.S. Eng., L.R.C.P. Lond. (Llanidloes); Mr. Nicholas W. Fairles-Humphreys, M.R.C.S. Eng. (Montgomery), fifteenth time; Mr. J. L. Davies, M.R.C.S. Eng., L.R.C.P. Lond. (Newport, Mon.); Mr. R. Jones Evans, M.R.C.S. Eng., L.R.C.P. Lond. (Pwllheli); Mr. J. Parkinson Atkinson, M.D. Glasg. (Saffron Walden), re-elected; and Mr. A. W. Limont, M.B., C.M. Edin. (Southport).—Mr. F. W. S. Stone was at the municipal elections at Dover returned at the head of the poll in an important ward. He has been chosen as deputy-mayor.

SOCIETY OF MEDICAL OFFICERS OF HEALTH: SCHOOL MEDICAL OFFICERS.—The first meeting of the School Medical Service group of the Society of Medical Officers of Health was held at 1, Upper Montague-street, London, W.C., the office of the society, on Nov. 7th, under the chairmanship of Dr. Alfred Greenwood. Dr. Robert Hughes, of Stoke-on-Trent, was elected chairman, Dr. Armly Ashkenny as honorary secretary, and Dr. C. W. Hutt, honorary treasurer. The committee of the group consists of the above three *ex-officio* members, together with one member from each of the 10 branches of the Society of Medical Officers of Health. The constitution of the group was discussed, and it was decided that all medical officers engaged in the School Medical Service be invited to join; and assistants in the service will have special consideration, for, as pointed out by Dr. A. Bostock Hill, the school medical officer and medical officer of health for Warwickshire, the primary object of the group is to remedy the admitted discontent existing among them rather than among the senior or administrative medical officers, who already have their own groups. Subjects urgently pressing for remedies were fully discussed. The present low salaries of assistants were condemned as very inadequate considering the long, expensive, and arduous professional training, often lasting for ten years, and the responsible, onerous, and the rapidly increasing duties to be performed. It was pointed out that the Board of Education have admitted the inadequacy of salaries of medical officers in their circular letter to local authorities dated August 18th. Even with the promise of increased grants by the board for medical inspection, local education authorities were not likely to increase the salaries of the medical staff to any considerable extent, as desired by the board, unless all assistant medical officers combined in one body and unitedly claimed just treatment from local authorities. The group meeting therefore passed a resolution to the effect that the Society of Medical Officers of Health recommend the British Medical Association to accept no advertisement for a whole-time assistant school medical officer at a less sum than a commencing salary of £350 per annum. The next meeting of the group will be held on Saturday, Dec. 6th, at 2 P.M., at 1, Upper Montague-street, Russell-square, London, W.C. Assistants in the School Medical Service are requested to send their name and address, and anything that may be of interest to the service to Dr. Armly Ashkenny, honorary secretary, Medical Department, Education Office, Council House, Birmingham.

PATHOLOGICAL UNIVERSITY INSTITUTE, BERLIN.—This institution, of which Dr. Goldscheider is the director, has just been considerably enlarged. The clinical department now contains 56 beds, 15 of which are reserved for hydrotherapeutic treatment. In the out-patient department there are now eight assistant physicians.

A PLYMOUTH CENTENARIAN.—John Ryan died at Plymouth on Oct. 29th in his 104th year. He was born at Thurles, Tipperary, on June 24th, 1810, and went to Plymouth in 1851. He was wonderfully active for his age, and until two weeks previously to his death walked to church every Sunday.

A MEETING will be held on Tuesday, Nov. 18th, at 8.30 P.M., at 11, Chandos-street, W., to discuss the position of medical officers in His Majesty's prisons. The chair will be taken by Dr. W. Hugh Fenton. A resolution will be submitted calling upon the Home Office to cease to require the prison medical officers to act under the direction of the lay authorities in professional matters, and to abandon the practice of forcible feeding, which has proved futile, and which is only continued as a punishment.

GLASGOW UNIVERSITY CLUB, LONDON.—The winter dinner of this club will be held at the Trocadero Restaurant, Piccadilly Circus, on Friday, Nov. 28th, at 7.15 for 7.30 P.M., under the chairmanship of Sir William S. McCormick, secretary to the Carnegie Trust. Members intending to be present or to bring guests should give early notice to the honorary secretaries, Dr. David Roxburgh and Dr. Alexander Macphail, at 30, Seymour-street, London, W.

ROYAL SOCIETY OF ARTS.—The society will commence its 160th session on Nov. 19th with an address delivered at 8 P.M. by Colonel Sir Thomas H. Holdich, K.C.M.G. Before Christmas there will be four meetings besides the opening meeting, the subjects and the names of the speakers being as follows: Zoological Gardens, by Dr. Chalmers Mitchell; Perfumery, by Mr. John Umney; Applications of Electricity to Agriculture, by Mr. Thorne Baker; and the Channel Tunnel, by Mr. Arthur Fell. There will be five courses of Cantor Lectures, of which one course consisting of three lectures on the Measurement of Strains in Materials and Structure will be delivered by Professor Coker on Dec. 1st, 8th, and 15th. During the Christmas holidays a course of juvenile lectures on wireless telegraphy will be given by Mr. Howgrave Graham.

ROYAL MEDICAL BENEVOLENT FUND.—At the October meeting of the committee 24 cases were considered and grants amounting to £181 made to 18 of the applicants. Appended is an abstract of the cases relieved:—

Widow, aged 48, of M.R.C.S., L.R.C.P. Practically unprovided for at husband's death 18 months ago, and is endeavouring to support herself by taking boarders. Two daughters, aged 18 and 9, the elder earning 12s. 6d. a week as a clerk, the younger at an institution. Relieved once, £10. Voted £10.—Daughter, aged 61, of late M.R.C.S. Was one of nine children at the death of her father 50 years ago, and for many years supported herself and helped her mother by acting as governess or school matron. Income only a few shillings a week, and is no longer able to obtain remunerative work. Voted £10.—Widow, aged 70, of M.D. Glasgow. Lost her husband six months ago, and finds that owing to depreciation in investments her income will be less than £10 a year. No children or relations able to give permanent help. Voted £18.—Widow, aged 55, of L.R.C.P., L.R.C.S. Edin. Lost her husband a few months ago after an illness lasting several years, during which she supported the family by taking lodgers. Five children, of whom four are still at school and the eldest has just obtained a bursary at a university. Voted £12.—Widow, aged 50, of M.R.C.S. Quite unprovided for at recent death of husband from new growth, but hopes to support herself by obtaining paying guests. Voted £10.—L.S.A., aged 55. Has a very small practice in a London suburb, but has broken down in health and is ordered a holiday which he can ill afford. Voted £5.—Widow, aged 51, of M.D. Edin. Lost her husband some months ago after a long and painful illness which quite exhausted his small savings. Receives 3s. a week from a stepson and takes a lodger. Voted £10.—Widow, aged 46, of L.F.P.S. Glasg. Supported herself for several years after her husband's death as a school matron, but was obliged to give up her post on account of progressive deafness. No income, and dependent on a widowed mother whose means are very small. Asks for assistance to cover the expenses of sending her only son in for the examination for a second mate's certificate. Relieved once, £10. Voted £10.—Daughter, aged 68, of late M.R.C.S. Was a nurse for many years, and now has a pension of £20 a year from another society. Relieved three times, £36. Voted £6.—Widow, aged 73, of M.R.C.S. Receives an old-age pension and slight help from her children, but asks for assistance towards expenses incurred through chronic ill-health. Relieved eight times, £96. Voted £12.—Daughter, aged 51, of late M.R.C.S. Has a small house at a low rent, letting rooms in the summer and making sweets in the winter. Relieved twice, £20. Voted £12.—Daughter, aged 41, of late F.R.C.S. Has a stiff right shoulder-joint, which makes it very difficult to obtain regular and suitable employment. Relieved seven times, £84. Voted £12.—Daughter, aged 54, of late M.R.C.S. Used to be a nurse, but suffers from chronic glaucoma, and is now quite unable to support herself. Slight help from relations. Relieved five times, £45. Voted £10.—Widow, aged 73, of M.R.C.S. Receives an old-age pension and 5s. a week from a charitable society. Relieved once, £12. Voted £9.—Widow, aged 47, of M.D. Assists at a boarding-house kept by a widowed sister, but receives no salary, and asks for help towards small expenses unavoidably incurred for her boy, aged 14. Relieved 14 times, £151. Voted £5.—Widow, aged 64, of L.R.C.S., L.R.C.P. Irel. Has a situation as cook, but finds the work so hard that she is obliged to give it up. Proposes to live with a son earning a small weekly wage and having five children. Relieved once, £5. Voted £12.—Daughter, aged 71, of late M.D. Is an inmate at a Home for Incurables, but has no means to meet small unavoidable expenses. Was an annuitant of this Fund until elected to the Home. Voted £6.—Daughter, aged 58, of late M.R.C.S. Is almost blind and entirely dependent upon a friend and the help given by this Fund. Relieved three times, £22. Voted £12.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, 41 and 43, Maddox-street, London, W.

Thirty Years in Kashmir. By Arthur Neve, F.R.C.S.E., Church Missionary Society. Price 12s. 6d. net.

BAILLIÈRE, TINDALL, AND COX, London.

Treatment by Hypnotism and Suggestion, or Psycho-Therapeutics. By C. Lloyd Tuckey, M.D. Aberd., Membre Fondateur de la Société d'Hypnologie, Honorary Member of the American Society for the Study and Cure of Inebriety; First President of the Psycho-Medical Society. Sixth edition, revised and enlarged, With a Foreword by Sir Francis R. Cruise, M.D., D.L., K.S.G., Honorary Physician to the King in Ireland. Price 10s. 6d. net.

BERGMANN, J. F., Wiesbaden.

Dynamische Biochemie. Chemie der Lebensvorgänge. Von Dr. Sigmund Fränkel, a.o. Professor für Medizinische Chemie an der Wiener Universität. Price M.18.60.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

From Girlhood to Womanhood. By Elizabeth Sloan Chesser, M.B. Price 2s. 6d. net.

Life and its Beginnings. By Helen Webb, M.B. Lond. Price 2s. 6d. net.

What a Boy Should Know. By A. T. Schofield, M.D., and Percy Vaughan-Jackson, M.D. Price 2s. 6d. net.

Before I Wed; or, Young Men and Marriage. By Sir Thomas Clouston, M.D., LL.D. Price 2s. 6d. net.

ENGELMANN, WILHELM, Leipzig und Berlin.

Geschichte der biologischen Theorien in der Neuzeit. Von Dr. Em. Rádl. I. Teil. 2. gänzlich umgearbeitete Auflage. Price, paper, M.9; bound, M.10.

FISCHER, GUSTAV, Jena.

Handbuch der pathogenen Mikroorganismen. Herausgegeben von Dr. W. Kolle und Dr. A. von Wassermann. Zweite vermehrte Anflage. Fünfundfünfzigste und sechsundfünfzigste Lieferung (Bd. III., Seite 177–496). Siebenundfünfzigste und achtundfünfzigste Lieferung (Bd. III., Seite 497–794). Neunundfünfzigste und sechzigste Lieferung (Bd. III., Seite 795–1114). Einundsechzigste und zweiundsechzigste Lieferung (Bd. III., S. 1115–Schluss, Titel und Inhalt; Bd. VII., S. 949–Schluss, Titel und Inhalt; Bd. VIII., S. 577–608). Price M.5 each.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Siebenunddreissigste Lieferung. Band III. Physiologie des Energiewechsels, Physiologie des Formwechsels. Erste Hälfte. Seite 1133–1294. Price M.5.

Biochemie des Wachstums des Menschen und der höheren Tiere. Von Dr. Phil. et Med. Hans Aron, Assistenzarzt und Laboratoriums-vorsteher an der Kgl. Universitäts-Kinderklinik in Breslau. (Erweiterte Sonderausgabe aus dem "Handbuch der Biochemie" Ergänzungsband.) Price M.2.50.

Anatomie des Centralnervensystems. Von Prof. Dr. Th. Ziehen in Wiesbaden. Zweite Abteilung: Mikroskopische Anatomie des Gehirns. Erster Teil. (Bildet zugleich die 23. Lieferung des "Handbuchs der Anatomie des Menschen," herausgegeben von Prof. Dr. Karl von Bardeleben. Vierter Band. Zweite Abteilung, erster Teil.) Price M.14.

Die Cystenniere. Studien über ihre pathologische Anatomie. Von O. Berner, prosektor der Histologie an der Kgl. Frederiks-Universität zu Kristiania. Price M.25.

Handbuch der gesamten Therapie. In sieben Bänden. Herausgegeben von Dr. F. Penzoldt, Professor in Erlangen, und Dr. R. Stintzing, Professor in Jena. Fünfte Auflage. Lieferung I. (Probelieferung). Price M.1.

HIRSCHWALD, AUGUST, Berlin.

Klinik der Nervenkrankheiten. Ein Lehrbuch für Aerzte und Studierende. Mit einem Vorwort von Prof. G. Klemperer. Von Dr. Leo Jacobsohn. Price M.19.

HOLZEL, ED., Luisengasse, 5, Wien, IV/2.

Das Problem des Verbrühungstodes. Studie zur Pathologie und Pathogenese der thermischen Allgemeinschädigung. Von Dr. Hermann Pfeiffer, a.o. Professor für allgemeine und experimentelle Pathologie an der k.k. Universität Graz. Price M.8; K.9.60.

KLINKHARDT, DR. WERNER, Liebigstrasse, 2, Leipzig.

Urologischer Jahresbericht, einschliesslich der Erkrankungen des männlichen Genitalapparates. Literatur 1912. Redigiert von Prof. Dr. A. Kollmann in Leipzig und Dr. S. Jacoby in Berlin. Price, paper, M.21; bound, M.23.

KIMPTON, HENRY, London. STENHOUSE, ALEXANDER, Glasgow.

Malaria: Etiology, Pathology, Diagnosis, Prophylaxis, and Treatment. By Graham E. Henson, M.D. With an Introduction by Charles C. Bass, M.D., Professor of Experimental Medicine, Medical Department, Tulane University, New Orleans. Price 10s. 6d. net.

The Diseases of Children. By Henry Enos Tuley, M.D., late Professor of Obstetrics, University of Louisville, Medical Department; ex-Secretary and ex-Chairman of the Section on Diseases of Children, American Medical Association. Second revised edition. Price 24s. net.

LEHMANN, J. F., Munich.

Die Chirurgie in Einzeldarstellungen. Herausgegeben von Professor Dr. Rudolf Grashey in München. Die Praxis der Gallenwege-Chirurgie in Wort und Bild. I. Band: Die Vorbereitungen zu einer Operation an den Gallenwegen und die allgemeine Technik der Gallenwege-Chirurgie. Von Professor Dr. Hans Kehr, Geh.-Sanitätsrat in Berlin. Price, paper, M.28; bound, M.30.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

The Administrative Control of Small-pox. How to Prevent or Stop an Outbreak. By W. McC. Wanklyn, B.A. Cantab., M.R.C.S., L.R.C.P. D.P.H., formerly Referee in the Diagnosis of Small-pox and Medical Superintendent of the River Ambulance Service (Small-pox) of the Metropolitan Asylums Board. Price 3s. 6d. net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ADAMSON, A. F., M.B., Ch.B. Edin., has been appointed Junior Assistant Physician at the Ayr District Asylum.

BRIDGE, JOHN C., F.R.C.S. Edin., D.P.H. Camb., has been appointed a Medical Inspector of Factories.

CARLING, E. ROCK, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Demonstrator of Surgical Anatomy at Westminster Hospital Medical School.

D'ALTON, J., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Banagher District of King's County.

EVANS, ARTHUR, M.S., M.D. Lond., F.R.C.S. Eng., has been appointed Teacher of Operative Surgery and Demonstrator of Surgical Pathology at Westminster Hospital Medical School.

FISHER, E. G., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Registrar and Tutor to the Royal Infirmary, University of Liverpool.

HALL, J., M.B., B.Ch.R.U.I., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

HENDERSON, JOHN, M.D., Ch.B. Glasg., F.R.F.P.S. Glasg., has been appointed Lecturer-Examiner in Clinical Medicine in the University of Glasgow.

MOXON, FRANK, M.B., B.S. Durh., has been appointed Honorary Ophthalmic Surgeon to the St. Marylebone General Dispensary.

NIX, R. E., M.B., B.C. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Chatteris District of the county of Cambridge.

ORR, VIVIAN B., M.B., B.S. Melb., has been appointed Lecturer on Anæsthetics at Westminster Hospital Medical School.

SLOAN, J. F. M., M.B., Ch.B. Glasg., has been appointed Senior Assistant Physician at the Ayr District Asylum.

SWAINSON, J. M. G., F.R.C.S. Eng., has been appointed Joint Tutor in Surgery at Westminster Hospital Medical School.

TURNER, WILLIAM, M.S., M.B. Lond., F.R.C.S. Eng., has been appointed Lecturer on Surgery at Westminster Hospital Medical School.

TYRRELL, W., M.B., B.Ch.R.U.I., has been appointed House Surgeon at the Royal Victoria Hospital, Belfast.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARGYLL AND BUTE ASYLUM, Lochgilphead.—Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, and laundry.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—House Physician, also House Surgeon, for six months. Salaries at the rate of £75 per annum, with board, residence, &c.

BETHNAL GREEN INFIRMARY AND WORKHOUSE, Cambridge Heath, E.—Second and Third Assistant Medical Officers. Salary at rate of £120 and £100 per annum respectively, with board, residence, and washing.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.—House Surgeon. Salary at rate of £100 per annum.

BIRMINGHAM, ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and laundry.

BRECON, BRECONSHIRE COUNTY COUNCIL.—County Medical Officer of Health and County School Medical Officer. Salary £500 per annum.

BRIGHTON, ROYAL SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—House Surgeon for six months for Throat, Nose, and Ear. Salary £75 per annum, with board, apartments, and laundry. Also Dental House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and laundry. Also Honorary Assistant Physician.

BURY AND DISTRICT JOINT HOSPITAL BOARD.—Assistant Medical Superintendent. Salary £200 per annum, with board, washing, and lodging.

CAMBERWELL INFIRMARY AND CHILDREN'S HOMES.—Assistant Medical Officer. Salary £180 per annum, with apartments, board, and washing.

CAMBRIDGESHIRE COUNTY COUNCIL.—Tuberculosis Officer. Salary £300 per annum.

CARMARTHEN, JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary £180 per annum, with board, lodging, washing, &c.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, lodging, and washing.

CHESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with residence and maintenance.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

CORNWALL EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, &c.

DINAS MAWDDWY BOARD OF GUARDIANS.—Medical Officer, &c. Salary about £110 per annum.

DORCHESTER, COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £200 per annum, all found.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, and laundry.

DOWN COUNTY COUNCIL.—Assistant Tuberculosis Medical Officer. Salary at rate of £350 per annum.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £100 per annum, with residence, board, and washing.

EASTERN DISPENSARY, Leman-street, E.—Resident Medical Officer. Salary £120 per annum, with residence and attendance.

EAST SUSSEX COUNTY COUNCIL EDUCATION COMMITTEE.—Junior Assistant School Medical Officer. Salary £250 per annum.

GATESHEAD ASYLUM, Stannington, Northumberland.—Assistant Medical Officer, unmarried. Salary £220 per annum, with rooms, board, and laundry.

GATESHEAD UNION, WHINNEY HOUSE ESTABLISHMENTS AT SHOTLEY BRIDGE FOR AGED AND INFIRM AND OTHER POOR PERSONS.—Resident Assistant Medical Officer. Salary £250 per annum, with apartments, rations, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London, N.—House Physician for six months. Salary at rate of £40 per annum, with board, residence, and laundry. Also Surgeon to Out-patients.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £80 per annum, with residence, board, and washing.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida-vale, W.—Two Assistant Physicians.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Surgeon to Out-patients.

HULL ROYAL INFIRMARY.—Casualty House Surgeon for six months. Salary at rate of £80 per annum, with board and lodging.

INDIA OFFICE, London, S.W.—Dentists for British Troops in India.

ITALIAN HOSPITAL, Queen-square, W.C.—House Surgeon for six months. Salary £60 per annum, with board and residence.

KELLING SANATORIUM, Norfolk.—Assistant Resident Medical Officer, unmarried. Salary £70 per annum, with board, lodging, and laundry.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Dental Surgeon.

LEICESTER BOROUGH MENTAL HOSPITAL, Humberstone.—Junior Assistant Medical Officer, unmarried.

LIVERPOOL, CITY OF.—Assistant Tuberculosis Officer. Salary at rate of £400 per annum.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—House Surgeon. Salary at rate of £80 per annum.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £150 per annum, with board and residence.

LONDON LOCK HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing. Also House Surgeon to Female Hospital, Harrow-road, W. Salary £100 per annum, with board, residence, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Senior House Surgeon and Junior House Surgeon. Salary £100 and £80 per annum respectively, with board and residence.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £200 per annum, with quarters, attendance, washing, &c.

MANCHESTER, BAGULEY SANATORIUM FOR TREATMENT OF TUBERCULOSIS.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board and residence.

MANCHESTER, MONSALL FEVER HOSPITAL.—Third Medical Assistant. Salary £100 per annum, with board, lodging, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant Surgeon.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.—Resident Medical Officer for six months. Salary at rate of £80 per annum, with board, residence, and washing.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female House Physician, Two House Surgeons, and Obstetric Assistant for six months. Also Clinical Assistants for Out-patient Department and Assistant Pathologist.

NEWCASTLE-UPON-TYNE AND NORTHUMBERLAND SANATORIUM FOR CONSUMPTIVES, Barrasford, North Tyne.—Resident Medical Officer, unmarried. Salary £250 per annum, with board, residence, and laundry.

NEWCASTLE-ON-TYNE DISPENSARY.—Resident Medical Officer. Salary £250 per annum, with apartments, &c.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Resident Surgical Officer, unmarried. Salary £100 per annum.

OLDHAM ROYAL INFIRMARY.—Third House Surgeon for six months. Salary at rate of £80 per annum, with residence, board, and laundry.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

PADDINGTON INFIRMARY.—Second Assistant to Medical Superintendent of Infirmary and Medical Officer of Workhouse. Salary at rate of £140 per annum, with board, lodging, and washing.

POOLE, BOROUGH OF.—Medical Officer of Health. Salary £400 per annum.

POPLAR TRAINING SCHOOL, Hutton, Essex.—Visiting Dentist. Salary £60 per annum.

PORTSMOUTH ROYAL HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, &c.

RICHMOND, SURREY, ROYAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, apartments, and washing.

ROUSAY AND EGILSHAY, PARISH OF.—Resident Medical Officer. Salary £71 per annum.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Election to the Court of Examiners.

ROYAL EAR HOSPITAL, 42 and 43, Dean-street, Soho, London.—House Surgeon. Salary £40 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Clinical Assistants for six months.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Radiographer. Salary £40 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Junior Resident Medical Officer for six months. Salary at rate of £70 per annum, with residence, board, and laundry.

ST. PANCRAS WORKHOUSE AND SOUTH INFIRMARY, Pancras-road, N.W.—Female Junior Assistant Medical Superintendent. Salary at rate of £100 per annum, with apartments, rations, and washing.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £75 per annum, with board, lodging, and washing.

SCALEBOR PARK ASYLUM, Burley-in-Wharfedale.—Assistant Medical Officer. Salary £200 per annum, with board, apartments, attendance, &c.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon for six months. Salary £80 per annum, with board and residence.

SMETHWICK, CORNWALL WORKS DISPENSARY.—Assistant Medical Officer.

STIRLING ROYAL INFIRMARY.—Resident House Surgeon. Salary £100 per annum, with board.

SURREY COUNTY COUNCIL EDUCATION COMMITTEE.—Three Assistant School Medical Officers. Salary £400 per annum each.

SWANSEA UNION WORKHOUSE.—Assistant Medical Officer. Salary about £260 per annum.

TAUNTON, SOMERSET AND BATH ASYLUM, Cotford.—Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, washing, attendance, &c.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Assistant in the Clinical Pathology Department. Salary £100 per annum, with luncheon.

UNIVERSITY OF LONDON.—Examiners.

UNIVERSITY OF LONDON, KING'S COLLEGE.—Demonstrator of Anatomy. Salary £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, and washing.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon. Salary £90 per annum, with board, residence, and laundry.

WEST RIDING COUNTY COUNCIL.—School Oculist. Salary £300 per annum. Also Three School Dentists. Salary £250 per annum. Also Three School Medical Inspectors. Salary £300 per annum.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with rations, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Acts at Clackmannan, in the county of Clackmannan.

Births, Marriages, and Deaths.

BIRTHS.

VERNON.—On Nov. 6th, at Wordsworth Lodge, Shirley, Southampton to Dr. and Mrs. Rupert Vernon, a daughter.

MARRIAGES.

DICK—WALLACE.—On Nov. 8th, at Highgate Presbyterian Church, James Reid Dick, M.B., B.C. Cantab., to Davina Orford, daughter of William Wallace, of Highgate, N.

SYMNS—SOWTER.—On Nov. 6th, at All Saints', Notting Hill, James Llewellyn Montfort Symns, B.A., M.B., B.C. Cantab., to Claire Hickling Dart Sowter, eldest daughter of John Sowter, of Derby.

THOMAS—PATERSON.—On Nov. 1st, at Upwey, Dorset, Robert Evans Thomas, M.D., to Mary, youngest daughter of the late William Paterson, of Dorchester, and of Mrs. Paterson, of Upwey, Dorset.

DEATHS.

CLENDINNEN.—On Nov. 6th, at Park-lane, Frederick J. Clendinnen, M.D., of Melbourne, Australia.

ROBINSON.—On Oct. 8th, suddenly, at Colombo, Morris de Lancey Robinson, M.D., B.S., D.P.H., aged 32 years.

SWEETING.—On Nov. 10th, at Fernshaw Mansions, S.W., Richard Deane Sweeting, M.D., Barrister-at-Law, Senior Medical Inspector, H.M. Local Government Board, Whitehall. Funeral private. No flowers, by special request.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SO-CALLED RITUAL MURDER.

To the Editor of THE LANCET.

SIR,—Mendel Beiliss, the Jew, has been acquitted at Kieff of the murder of the Christian boy, Yushinsky. This verdict therefore confirms the verdicts of previous generations in modern times. With reference to my letter in THE LANCET of Nov. 8th, quoting John Timbs, a further reference to the case at Damascus will be found in "The Historic Note-Book," by the Rev. E. Cobham Brewer, LL.D., published by Smith, Elder, and Co. in 1891. It runs as follows:—

> Jews of Damascus (Persecution of the), 1840. A Catholic priest named Thomaso of Damascus, having disappeared suddenly in February, a Jew barber at whose house he was seen was examined by torture, when he accused seven of the most wealthy Jewish merchants of being concerned in the murder. The seven merchants were apprehended; two died under torture, the other five pleaded guilty. A dreadful persecution of the Jews followed, and the absurd notion was confirmed that human blood was necessary for the paschal feast. The English and French interfered, represented to Mehemet Ali the absurdity of the notion, and the persecution ceased.

References to this matter are not easy to find, and the above is the only one which relates to it so far as my search goes. It is possible that the superstition arose from, or was inflamed by, the misinterpretation of symbolic pictures by the ignorant populace. In an old Jewish book discovered by a fourteenth century alchemist there was a picture of a king standing by while his soldiers killed the children of weeping mothers, together with allegorical pictures of the sun and moon bathing in their blood in a bowl. Reference will be found in "Popular Delusions," by Chas. Mackay, LL.D., published in 1856.

I am, Sir, yours faithfully,

Nov. 11th, 1913. A GENTILE.

NYASALAND HEALTH REPORT.

A REPORT on the Blue-book of the Nyasaland Protectorate (which comprises the eastern portion of British Central Africa) for the year 1912-13 has been issued by the Colonial Office as a Parliamentary paper. The European population, it states, is now 758, as against 773 in 1911-12. The native population is estimated at 1,020,537. The Asiatic population amounts to 356, as compared with 463 in the previous year, the decrease being accounted for by the disbandment of the Indian contingent of the 1st Battalion King's African Rifles and the consequent return of the troops to India. Twenty-seven European births were registered, as against 24 in the preceding year. The number of deaths of Europeans and Asiatics registered during the year amounted to 11 and 7 respectively, as compared with 7 and 8 in the preceding year. The European birth-rate was 35·62 and the death-rate 14·51 per 1000. Seven European marriages were celebrated. The health of the native population has been on the whole satisfactory, and there was complete immunity from serious epidemics during the year. The Royal Society's Commission has continued its investigations at Kasu in the vicinity of the sleeping sickness area. Up to the end of March, 1913, 126 cases of sleeping sickness have been recorded in the Protectorate, and during the year under review 63 cases were diagnosed, as compared with 25 in the previous year and 30 in the year preceding. Of the 63 cases diagnosed during the past year, 40 were males and 23 females. The increase in 1912-13, as compared with 1909-10 and 1910-11, is noteworthy; it would, however, be premature to draw deductions therefrom at this date, especially when it is remembered that, as the natives become accustomed to the presence of medical officers and have now no fear of cases being deported to a segregation camp, there is less likelihood of concealment of the sick as time goes on, and therefore the chances of finding a larger proportion of the infected will be correspondingly increased. The immunity of the native population from small-pox has been a satisfactory feature of the public health during the year, and though outbreaks of a sporadic character have been reported they have been due solely to infection having been conveyed from adjoining territories, and the disease in every instance has been rapidly checked. This satisfactory state of affairs is the result of the widespread and thorough vaccination which has been carried out during recent years and which is being continued throughout the Protectorate. The widespread existence of ankylostomiasis in the North Nyasa district formed the subject of investigation during the year, and it is intended to apply the District Administration (Native) Ordinance to this district with the special object of enabling Government to introduce a system of deep-trench latrines throughout the native villages. It is hoped that by this means the percentage of infected natives will be reduced and the physical condition of the natives improved. The danger to be

apprehended from the employment of Nyasaland natives as labourers in the South Africa mines and their return to the Protectorate with tuberculous infection is evidenced by the results of the medical examination of 1274 natives repatriated from the Transvaal mines during the year. It was found that no less than 3 per cent. were actually phthisical, while 9·5 per cent. were returned as suspicious cases.

SULPHUR AND TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct. 18th there is an annotation on the supposed preventive action of sulphur fumes on the development of tuberculosis. The week after this article appeared an old lady came to one of my branch dispensaries with a patient whom she had been treating by the novel method of rubbing flowers of sulphur into the back daily. She proudly pointed out that the patient had gained three pounds in weight during the first fortnight of treatment. This unqualified practitioner also informed me that she had "cured" many cases of cancer and consumption by this method, combined in the latter disease with the "breathing in" of sulphur fumes. Her only egret was that patients would not always submit to the inhalation reatment—the majority preferring the disease to the remedy.

I may add that I have not yet seen any of the cases "cured by this nteresting survival of the methods of Galenic medicine.

I am, Sir, yours faithfully,

R. C. HUTCHINSON,
Tuberculosis Officer for Carmarthenshire and Cardiganshire Area.

Carmarthen, Nov. 6th, 1913.

WOMEN AND SOCIAL HYGIENE.

THE *Gentlewoman* in its issue of Nov. 1st urges upon its readers the desirability of their entering on a crusade to instruct the people on the preciousness of human life, and to teach the simple hygienic rules whereby immense loss and suffering can be obviated. This, it points out, can be done without poking into little homes and upsetting mothers. It would have them begin with the educational authorities, not troubling themselves about the curriculum of a school, which can safely be left to the head masters and mistresses, but insisting that the school shall be run on hygienic principles, by urging the use of tooth-brush drill, the separation of tuberculous from non-tuberculous children, and the adjustment of the hours of study to the health of the child.

THE INCORPORATED ASSOCIATION OF HOSPITAL OFFICERS.

AN interesting programme has been arranged for the Twelfth Session of the Incorporated Association of Hospital Officers which has for its objects the social intercourse of hospital officials, the study of hospital construction, equipment, and management, and other matters affecting the duties and responsibilities of hospital officers. Monthly meetings are held at the association's headquarters, 62, Chandos-street, Covent Garden. A conference has been arranged for March next between the association and the Poor-Law Officers' Association, and the Saturday afternoon visits include the most recently erected hospitals, concluding in June next with a visit to Birmingham and its hospitals.

PHARMACEUTICAL STUDENTS AND COMPULSORY LATIN.

THE council of the Pharmaceutical Society has amended in several respects the regulations concerning the registration of pharmaceutical students, the most important of the alterations being the deletion of Latin from the list of the compulsory subjects of the entrance examination. This decision is a sign of the times, and when one recalls that only 60 years have gone by since the London Pharmacopœia was issued in Latin it is a sign that we are moving rapidly. The decadence of Latin as the language of pharmaceutics began in 1864, when the British Pharmacopœia was officially published in English, and has lately been hastened by the educational policy of the schools from which chemists' apprentices are mostly drawn. Latin is not taught in these schools as an ordinary subject, and the result is that many a boy well suited to begin to learn pharmacy has chosen some other business for the simple reason that he could not pass an examination in Latin. The dropping of Latin from the compulsory part of the syllabus of the preliminary examination is, in fact, a corollary of the neglect of that subject by the secondary schools, and if blame is due to anyone for the council's decision it is to the schoolmasters. It is essential that there should be a steady flow of pharmaceutical students, preferably with a knowledge of Latin, but the flow must be maintained, and if Latin is clogging the stream it must go. In nearly all other countries the same tendency is observable; in Germany the Pharmacopœia is published in German, in France in French, in Italy in Italian, in Spain in Spanish, in Russia in Russian, in Sweden in Swedish. In Japan the last Latin edition of the Pharmacopœia was published in 1891, the present edition being in Japanese with an English translation. The new Norwegian Pharmacopœia is in the native tongue, and although the Pharmacopœia of Holland is issued simultaneously in Latin and Dutch, and the Belgian Pharmacopœia in Latin and French, few thumb marks would probably be found on the Latin pages of those in use. The same tendency is to be observed in the practice of prescribers, although the Latin prescription seems to die harder in this country than elsewhere. Notwithstanding, however, that Latin is no longer a compulsory subject for pharmaceutical students, they would be well advised to act upon the recommendation of the Pharmaceutical Society's council and take Latin as an optional subject. For candidates for the qualifying examination will still be required to pass a test in prescription reading which necessitates a knowledge of Latin, or at least a bowing acquaintance with it.

THE CASE OF MR. H. T. HAMILTON.

To the Editor of THE LANCET.

SIR,—To the donations already acknowledged (i.e., £54 5s.) I have now to add the following: Dr. Vaughan-Pendred, East Sheen, 10s. 6d.; Dr. E. B. Denny, East Barkwith, Lincs., £3 3s.; and Dr. Deane, Lincoln, £3 3s. I am, Sir, yours faithfully,

W. H. GIMBLETT, M.D.

86, Sutherland-avenue, Maida Vale, W., Nov. 11th, 1913.

THE MAGAZINE OF THE ROYAL FREE HOSPITAL (SCHOOL OF MEDICINE FOR WOMEN).

THE annual meeting of subscribers to this magazine will be held at the Medical School, 8, Hunter-street, W.C., on Thursday, Dec. 11th, at 4.30 P.M. All subscribers are cordially invited to be present.

COPYING PENCILS.

Messrs. Hardtmuth, Limited, of Koh-i-noor House, Kingsway, London, W.C., have sent us some of their "Mephisto" copying pencils, which they suggest will be found of service for duplicating reports under the National Health Insurance Act, and for any other purposes where indelible writing is required. From our own trial of the pencils, which are quite inexpensive, we agree with the professed claim.

A NEW MAP OF LONDON AND ENVIRONS.

A PRACTICAL working map of London, which includes on one sheet as wide a stretch of territory as from Harrow, Heston, Twickenham, Teddington, and Hampton on the west, to Chadwell Heath, Erith, Bexley, and Chislehurst on the east, and from Tottenham and Walthamstow on the north, to Kingston, Merton, Croydon, and Bromley on the south, is Stanford's "New Two Inch Map of London and its Environs" (price 5s. 6d.). A scale of 2 inches to the mile, in the hands of such skilful map-makers as Stanford's, gives scope for very considerable detail, and the names of streets are legible. The size of the map is 42 by 25½ inches, and it is printed on a tough paper that apparently will stand a good deal of wear and tear.

A.B.C.—As to the prospects of British medical graduates for practice in British Columbia, it should be borne in mind that there is a fairly good supply of young Canadian graduates. Moreover, though their *average* literary and professional standard may be a trifle below the *average* in this country, it must not be forgotten they are as a rule better equipped for the business side of practice. This is due partly to the fact that the average age for qualification is a little older, many of them supporting themselves by various business employments and earning the money for their medical curriculum.

G.M.S.—The reference to a previous issue which appeared in the paragraph on "Vaccination in the West of England" in our last issue was to THE LANCET of Oct. 25th, 1913, p. 1217.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced.

In 1913:—

Nov. 7th–15th (London, Olympia).—Twelfth International Motor Exhibition.

Dec. 16th–20th (Aberdeen).—Red Cross and National Health Service Exhibition.

In 1914:—

April 14th–18th (New York).—Fourth Congress of the International Surgical Society.

May 1st–Nov. 1st (Lyons).—International Town Life Exhibition.

July 6th–11th (Blackpool).—Twenty-ninth Congress of the Royal Sanitary Institute.

„ 8th–13th (Edinburgh).—Congress of the Royal Institute of Public Health.

Aug. 3rd–8th (London).—Sixth International Dental Congress.

„ 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.

Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.

September (Vienna).—Third International Congress for Diseases of Occupation.

(London).—Anglo-American Exhibition.

(Aberdeen).—Eighty-second Annual Meeting of the British Medical Association.

(Auckland, N.Z.).—Australasian Medical Congress.

(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Dr. D. H. Scott, foreign secretary to the Royal Society: On Medullosa Pusilla.—Prof. A. F. S. Kent: Neuro-muscular Structures in the Heart (communicated by Prof. C. S. Sherrington).—Mr. G. Graham and Mr. E. P. Poulton: The Alleged Excretion of Creatine in Carbohydrate Starvation (communicated by Dr. F. G. Hopkins).—Mr. J. A. Gardner and Mr. P. E. Lander: The Origin and Destiny of Cholesterol in the Animal Organism. Part XI., The Cholesterol Content of Growing Chickens under Different Diets (communicated by Dr. A. D. Waller).—Mr. W. E. Bullock and Mr. W. Gramer: Contributions to the Biochemistry of Growth—On the Lipoids of Transplantable Tumours of the Mouse and the Rat (communicated by Sir J. R. Bradford, secretary to the Royal Society).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY.

SECTION OF THERAPEUTICS AND PHARMACOLOGY (Hon. Secretaries: W. Langdon Brown, Philip Hamill): at 4.30 P.M.

Papers:

Dr. F. Ransom: Diabetic Gangrene and Excretion of Calcium.
Dr. R. W. Leftwich: On Uniformity of Dosage.

GENERAL MEETING OF FELLOWS at 5 P.M.

Ballot for Candidates for Fellowship.

SECTION OF PATHOLOGY (Hon. Secretaries—Gordon W. Goodhart, C. Price-Jones): at 8.30 P.M.

Dr. R. A. Chisolm:
Dr. Warren Crowe: The Primary Cause of Rheumatoid Arthritis.
Dr. E. P. Minett: The Pathogenicity of an Organism Isolated from Non-ulcerating Cancerous Growths (communicated by Dr. J. W. H. Eyre).

WEDNESDAY.

SECTION OF THE HISTORY OF MEDICINE (Hon. Secretaries—Raymond Crawfurd, D'Arcy Power): at 5 P.M.

Dr. Charles Singer: St. Hildegarde.
Dr. John Rolleston: Medical Aspects of the Greek Anthology (Part I.).
Dr. Raymond Crawfurd will show a collection of "Touch Pieces."
Dr. F. W. Cock will show some Old Surgical Instruments.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—J. M. H. MacLeod, S. E. Dore): at 5 P.M.

Cases:

Sir Malcolm Morris and Dr. Dore: Case for Diagnosis.
Dr. Pringle: (1) Case of Mycosis Fungoides; (2) Case of Disseminated Lupus Erythematosus.
Dr. Adamson: (1) Acute Multiple Lupus Vulgaris in an Adult Simulating Lupus Erythematosus; (2) Case of Mycosis Fungoides.
Dr. Walsh: Case of Epidermolysis Bullosa.
Dr. Dudley Corbett: A New Radiometer.
Dr. Haldin Davis: Case of Psoriasis in an Infant aged Six Weeks.
Dr. Pernet: (1) Case of Verrucose Tuberculosis Cutis following Measles; (2) Case of Prurigo in a Boy; (3) Case of Dermatitis Artefacta.

FRIDAY.

SECTION OF OTOLOGY (Hon. Secretaries—G. J. Jenkins, G. N. Biggs): at 5 P.M.

Cases:

Will be shown by Dr. W. H. Kelson, Mr. F. Muecke, Mr. G. J. Jenkins, and others.

SECTION OF ELECTRO-THERAPEUTICS (Hon. Secretaries—Cecil R. C. Lyster, S. Gilbert Scott): at 8.30 P.M.

Discussion

On the Technique and Standardization of Bismuth Meals. Opened by Dr. Reginald Morton.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Adjourned Discussion on the Treatment of Neurasthenia. Speakers:—Dr. Mennell, Dr. C. Fothergill, Mr. E. Clarke, Dr. S. A. K. Wilson, Dr. Branson, and others.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY.—4.30 P.M. Meeting. 5.15 P.M., Discussion on Chronic Lupus (opened by Dr. W. Griffith).

CHELSEA CLINICAL SOCIETY, Club Rooms of the Medical School, St. George's Hospital, S.W.

TUESDAY.—8.30 P.M., Paper:—Mr. C. Frankau: Pyelitis. A discussion will follow.

ROYAL METEOROLOGICAL SOCIETY, Institution of Civil Engineers, Great George-street, Westminster, S.W.

WEDNESDAY.—7.30 P.M., Papers:—Mr. W. H. Dines: The Daily Temperature Range at Great Heights.—Mr. H. Harries: Eddy Wind of Gibraltar.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Paper:—Dr. M. Watson: The Prevention of Malaria in Rural Districts (with epidiascope demonstration).—Demonstration:—Dr. H. Bayon: Lupoid Leprosy and the Results of Treatment of Leprosy by means of a Cultural Extract.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Communications:—Mr. F. W. Chapman: Notes on the Shell Structure in the Genus Lingula—Recent and Fossil.—Mr. J. C. Kershaw: Development of an Embiid.

PLYMOUTH MEDICAL SOCIETY, Athenæum Chambers, Athenæum-lane, Plymouth.

SATURDAY.—8.30 P.M., Discussion on the Treatment of Suppurating Appendicitis (opened by Dr. H. W. Webber).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

THURSDAY.—3 P.M., Annual Meeting of Fellows and Members.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. A. M. H. Gray: Clinique (Skin). 5.15 P.M., Lecture:—Dr. F. J. Crookshank: Epilepsy and Epileptics.
TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M., Lecture:—Mr. H. Chapple: Some Effects of Chronic Intestinal Stasis on the Female Generative Organs.
WEDNESDAY.—4 P.M., Mr. J. K. Murphy: Clinique (Surgical). 5.15 P.M., Lecture:—Sir George Savage: Post Influenzal Neuroses.
THURSDAY.—4 P.M., Dr. T. G. Stewart: Clinique (Medical). 5.15 P.M., Lecture:—Mr. M. L. Hepburn: Some Points in the Ophthalmology of General Practice.
FRIDAY.—4 P.M., Dr. J. D. Grant: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Pritchard: Treatment of Infective Processes.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Treatment of Infective Processes.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Pritchard: Treatment of Infective Processes.
THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. Dr. Owen: Demonstration at Victoria Park Hospital. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Pritchard: Treatment of Infective Processes.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard; Treatment of Infective Processes.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.
TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine.
WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. B. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery. 4.30 P.M., Special Lecture:—Mr. C. C. Choyce: Some Varieties of Arthritis.
THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine. 4.30 P.M., Special Lecture:—Sir StClair Thomson: Syphilis of the Nose and Throat.
FRIDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford: Medicine 3.15 P.M., Mr. L. McGavin: Surgery. 3.15 P.M., Special Lecture:—Mr. L. McGavin: Some Causes of Intestinal Obstructions and their Surgical Treatment.
SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. B. Bickerton: Eye.—10 A.M., Col. Barry: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic: 2 P.M., Recent Methods of Investigating Heart Disease (Dr. A. J. Whiting). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3 P.M., Investigation of the Respiration in Disease. 4.30 P.M., Digestive Disturbances following Abdominal Operations (Dr. Giles).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON) Clinical Theatre, London Hospital, Mile End-road, E.

Course of Lectures on the Neuroses and Psychoses of Children:—

TUESDAY.—2 P.M., Dr. F. Warner: Children of Nervous Type.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Lecture:—Dr. Perkins: The Recognition of Latent and Arrested Pulmonary Tuberculosis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Progressive Muscular Atrophy.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Cerebellar Disease.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

MANCHESTER HOSPITALS POST-GRADUATE CLINIC.

TUESDAY.—SALFORD ROYAL HOSPITAL—4.30 P.M., Mr. J. B. Macalpine: Prostatic Hypertrophy.

WEDNESDAY.—ROYAL INFIRMARY—4.30 P.M., Mr. J. H. Ray: Abdominal Emergencies.

THURSDAY.—ANCOATS HOSPITAL—4.30 P.M., Dr. A. Renshaw: Neosalvarsan.

FRIDAY.—ROYAL EYE HOSPITAL—4.30 P.M., Dr. McNabb: Optic Neuritis and Atrophy.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICAL DEMONSTRATIONS.

TUESDAY.—SHEFFIELD ROYAL HOSPITAL.—3 P.M., Mr. G. Simpson: Diseases of the Testicle.

FRIDAY.—SHEFFIELD ROYAL HOSPITAL.—3 P.M., Dr. E. F. Skinner: The Vaccine Therapy of Skin Diseases.

ROTUNDA HOSPITAL POST-GRADUATE COURSES, Dublin.

MONDAY.—10 A.M., Obstetrical Lecture: Multiple Pregnancy. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations.

WEDNESDAY.—10 A.M., Obstetrical Lecture: Displacements of the Uterus during Pregnancy. 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Vulvar and Vaginal Tumours (continued). 11 A.M., Examination of Patients and Minor Operations.

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 12th, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 6	29·45	S.W.	...	69	53	45	46	48	Overcast
,, 7	29·59	N.	0·06	66	52	42	43	44	Cloudy
,, 8	29·63	S.E.	0·05	83	55	44	48	49	Raining
,, 9	29·76	N.E.	0·02	73	54	41	48	50	Fine
,, 10	29·68	S.	0·03	63	57	50	54	54	Overcast
,, 11	29·49	E.	0·30	77	59	50	51	51	Raining
,, 12	29·31	S.W.	0·10	78	57	51	53	55	Cloudy

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American Journal of Surgery, Journal of Obstetrics and Gynæcology of the British Empire, Ophthalmology, American Journal of the Medical Sciences, Boletin Medico Municipal al la Habana, Medical Review, Annals of Tropical Medicine, British Journal of Children' Diseases, Archives of the Roentgen Ray, Bulletins et Mémoires de la Société de Radiologie Médecale de Paris, Archives of Pediatrics, Journal of State Medicine, Journal of Physiology, Maryland Medica Journal, Saint Paul Medical Journal, South African Medical Record, British Dental Journal, Archives de Médecine et de Pharmacie Militaires, Archiv für Experimentelle Pathologie und Pharmakologie, Canadian Journal of Surgery, Revista de los Hospita (Montevideo).

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